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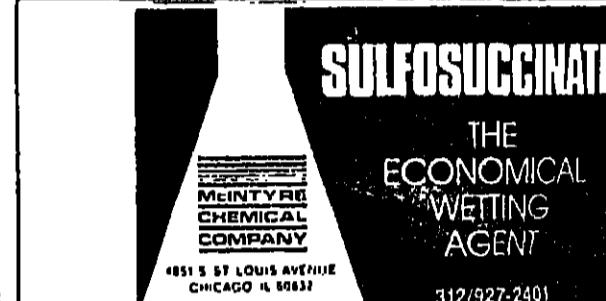
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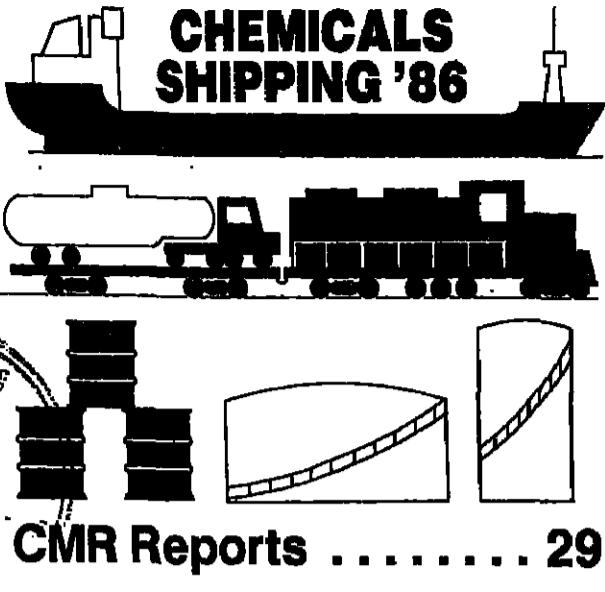
# Chemical Marketing Reporter

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NEWSPAPER OF THE CHEMICAL INDUSTRY

SEPTEMBER 29, 1986

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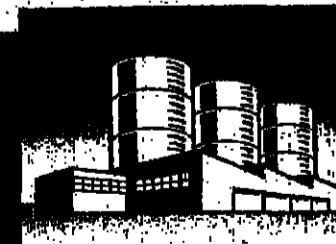
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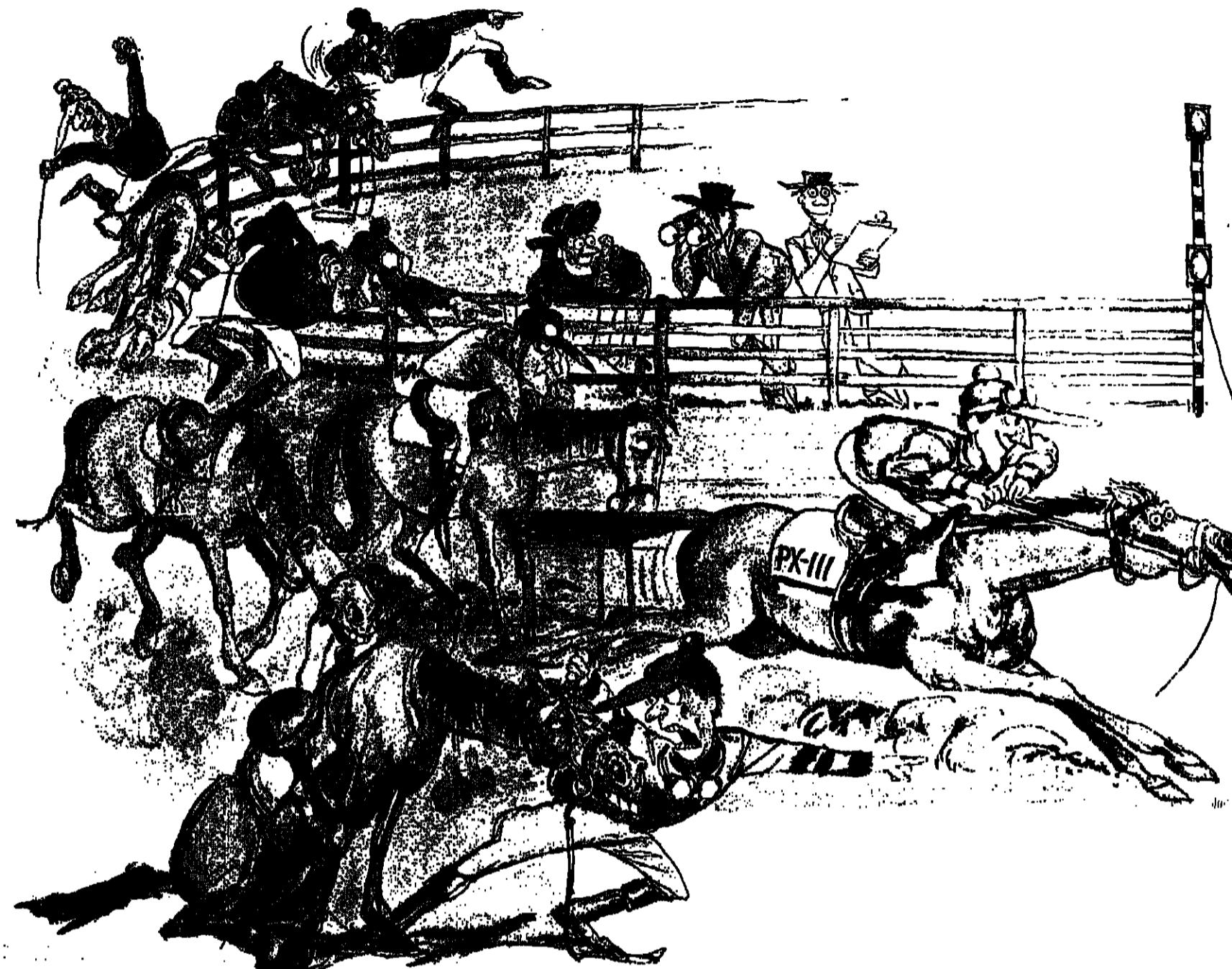


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## Olin, Du Pont Boost Electronics

Two major US chemical firms took steps to enlarge their presence in the electronics industry last week. E.I. du Pont de Nemours & Co. purchased Tau Laboratories, Inc., Poughkeepsie, N.Y., a maker of photomask products used in integrated circuits production for \$45 million in common stock. At the same time, Olin Corporation formed a joint venture with Asahi Glass Company Ltd., Tokyo, Japan, to produce thick-film ceramic substrates for the electronics market.

Du Pont's acquisition accompanies a corporate reorganization designed to set up business units to service Du Pont's electronics, printing and industrial imaging and health-care industries. One unit will be

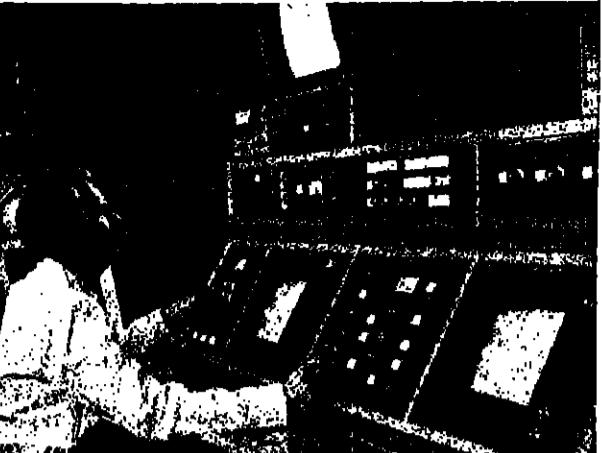
called the imaging systems department, another, the electronics department, and a third unit will be renamed the medical products department.

Tau Laboratories will join the electronics department. Du Pont says Tau is the only fully integrated maker of photomask products (which also includes photomask blanks and pellicles) in the world.

The company has the largest electron beam manufacturing capacity in the domestic private sector. Du

Continued on Page 15

**OLIN RESEARCH:** The company's metals research laboratories help keep the company competitive in high performance alloys, specialty products for electronics.



VOLUME 230  
Number 12

# Chemical Marketing Reporter

SEPTEMBER 22, 1986

## Linear Olefins Makers In Expansion Round

Company is calling for a 450-million-pound-per-year unit to be built in Japan by 1990. Mitsubishi already has a 660-million-pound-per-year unit in Mizushima, Japan.

At home, all three producers have expansion plans. Chevron Chemical Company says it will have 50 million pounds more annual capacity on line at its Cedar Bayou unit by November 1.

Total capacity after the expansion will be 250 million pounds per year of single C<sub>4</sub> through C<sub>6</sub> cuts with multiple cuts in the C<sub>8</sub> plus range.

Ethyl Corporation has announced plans to expand its 800-million-pound-per-year facility by about 150 million pounds by mid 1987. The expansion will focus on C<sub>4</sub> through C<sub>12</sub> chain lengths.

Shell Chemical Company USA has completed a capacity expansion at its Geismar, La. unit, which brings its total annual capacity to 800 million pounds per year of alpha and internal olefins.

The increased need for linear olefins is being driven primarily by copolymer consumption for linear low-density polyethylene. This growth is coming largely at the expense of conventional low-density polyethylene, according to observers.

While total worldwide demand for low-

Continued on Page 17

## Fluorocarbon Group Calls For a Cap on Production

A coalition of US chlorofluorocarbon producers and users called on the Reagan Administration last week to help negotiate, if necessary, a global cap on CFC production capacity.

Directors of the Alliance for Responsible CFC Policy approved a seven-point policy statement regarding US policy on the chemicals some scientists have linked to ozone depletion.

The policy calls, for the first time, on the US government to work "in cooperation with the world community under the auspices of the United Nations Environment Programme (UNEP) to consider establishing a reasonable global limit on the future rate of growth of fully halogenated CFC production capacity."

Richard Barnett, chairman of the alliance which represents 500 companies, including the major producers, said he considers the statement to be an outline of responsible US policy with regard to CFCs that is "compatible with current scientific understanding and consistent with the original goals of the CFC alliance."

Environmental Protection Agency has proposed, but not implemented, rules to cap on some types of production, the coalition's policy statement calls for the adoption of voluntary conservation programs by CFC manufacturers.

"We believe that large future increases in fully halogenated CFCs would be unacceptable to future generations and, in our view, it would be inconsistent with the goals of this alliance to ignore the potential risk to those future generations," says Mr. Barnett.

In addition to supporting a worldwide limit

on some types of production, the coalition's

policy statement calls for the adoption of

voluntary conservation programs by CFC

manufacturers.

The alliance does not believe that the scientific information demonstrates any actual risk from current CFC use, or emissions,

says Mr. Barnett.

"We recognize, however, the growing concern for potential ozone depletion and climate change as a result of large future growth of CFC emissions and the buildup of other trace gases in the atmosphere," he adds.

Mr. Barnett says the industry supports further scientific research and believes that regulatory policies should be periodically re-examined in the light of additional findings.

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WASTE REDUCTION: Most experts agree waste reduction should receive top priority, but few resources have been committed to doing so, says the Office of Technology Assessment. Hazardous waste problems abound, according to a new OTA report, but so do opportunities for reducing industrial hazardous waste generation.

Photo courtesy Industrial Training Systems Corporation

## Hazardous Waste Problems Are on All Sides, Says OTA

Hazardous waste problems — ranging from contaminated sites that require million-dollar cleanup to lost drinking water supplies — are everywhere, but so are opportunities to prevent future problems by reducing the generation of industrial hazardous waste, says a new study.

Reducing the generation of waste is the most certain way to reduce risks to health and the environment from hazardous waste and it's the best way to address what many people see as a crisis, according to the report by the Congressional Office of Technology Assessment.

Most hazardous waste experts have agreed for a decade that waste reduction should receive top priority, says OTA, but few resources have been committed to doing so.

If waste reduction is the best answer, it deserves top priority and the government and industry should get serious and make it work, OTA advises.

Despite the substantial benefits of waste reduction, more than 99 percent of Federal and state environmental spending goes to controlling pollution after waste is generated.

U.S. spending on the environment has risen

steadily over the past 14 years to about \$70 billion annually — equivalent to \$10 million a page for every one of the 7,000 pages of Federal environmental regulations and statutes, says OTA.

The attention and resources given to legally mandated pollution control activities limit the amount of thought, time, and money that industry can devote to waste reduction, says OTA.

Virtually all industries, whether high technology, smokestack, or small shops, generate hazardous waste. Using a broad definition that includes wastes that threaten health and the environment and enter the air, land, and water, OTA says that more than a ton of hazardous waste is generated annually for every person in the U.S.

OTA points out that not all hazardous waste can be eliminated, and an effective pollution control system will always be needed. But a national commitment to waste reduction can insure that the burden of hazardous waste does not continue to grow and threaten future generations, says OTA.

Some firms in industry have already discovered that waste reduction serves their own economic interest. OTA says that the

Continued on Page 18

## Engineered Enzymes' Aid In Fats and Oils Processing

Scientists from Genencor, Inc. say that new enzymes obtained using genetic engineering techniques can result in major changes in the products formed in enzyme catalyzed reactions.

By substituting specific amino acids in a typical hydrolytic enzyme, changes from two to twelvefold in the ratio of reaction products could also dramatically change products formed by these enzymes.

Genencor says the work demonstrates that genetic engineering may now be used to design enzymes for specific industrial processes. Substantial improvements in substrate specificity, product control and processing economics can be attained over conventional enzymes and conventional processing methods.

The enzyme engineering technology, for which patents have already been filed, is expected to enhance the commercial development of enzymatic trans-esterification of edible fats and oils.

Further applications include improvements in triglyceride hydrolysis for the production of specific fatty acids and monoglycerides, and the synthesis of high value-added peptides, and specific fatty acid or amino acid esters.

enzymes greatly altered the amount of ethyl ester versus the amount of acetic acid produced, he says.

Because other commercially useful enzymes, such as lipases and esterases have active site structures similar to subtilisin, modifications similar to those reported here could also dramatically change products formed by these enzymes.

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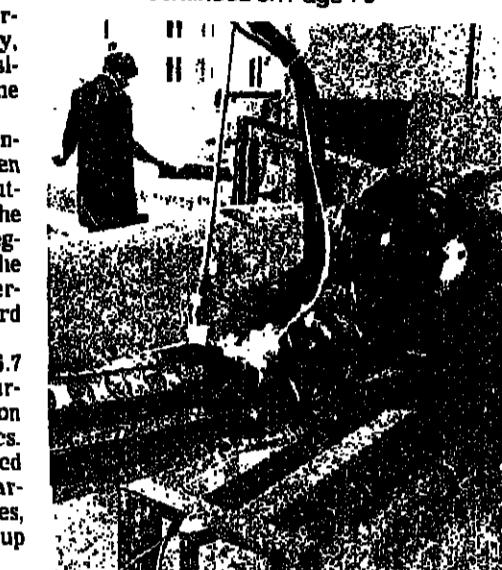
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basic polyethylene capacity at BASF is half what it was five years ago.

At the same time, the company has gone on a shopping spree for specialty resin units, while turning scientists loose in the laboratory to develop new resin systems. Last year BASF laid out some \$420 million on investments, acquisitions and research and development.

Continued on Page 70



BASE PLASTICS: Restructuring of commodity operations has led BASF AG to put more emphasis on specialties such as advanced composite materials. ACM's are particularly applicable to high-value aerospace and aircraft applications.

## BASF Plastics Unit Gears for Specialties

Strong growth for engineering thermoplastics in automotive, aerospace, and electronic industries, coupled with increased world capacity and maturing markets for commodity thermoplastics, has prompted BASF AG to implement a sweeping restructuring of its plastics organization in recent years.

The company has sharply trimmed vulnerable commodity thermoplastic capacity, while aggressively investing in new acquisitions and research and development in the fast-growing engineering plastics field.

Speaking at a trade press preview of Kunststoff '86 at the company's Ludwigshafen headquarters last week, BASF officials outlined the changes made and plans for the company's future in plastics, a business segment which represents over 15 percent of the company's total sales, according to Dr. Herbert Willemsen, a member of BASF's board of executive directors.

Last year, BASF plastics sales totalled 6.7 billion Deutsche marks (\$3.3 billion at current exchange rates), and a growing portion of the total is coming from advanced plastics. Dr. Willemsen says sales of these specialized resins are 8 percent to 10 percent above year-earlier levels, while commodity resin sales, with the exception of polypropylene, are up only marginally or are below 1985 totals.

The company has been busy reorganizing its commodity plastics business in the past five years, either by writing off assets, or upgrading the resin lines into specialty grades. The result, Dr. Willemsen says, is that

## Formaldehyde Makers See Flaws in Studies on Safety

In denying the claimed link to cancer and in criticizing the logic employed in some of the studies. Dr. Donald M. Hayes, of Burlington Industries and a member of the institute, accused one group of "fudging scientific rules to bias the results in the direction they wanted—that is, an association with cancer."

Mr. Howlett disclosed that the industry has been producing a new low-emission resin that reduces by 95 percent the formaldehyde emissions in finished products. This should make it easy for companies handling the resins to keep their exposure limits even below one part per million.

What makes the whole situation one of "straining at a gnat," another spokesman said, was the fact that the industry has virtually already met the rules which are being drawn up by no less than four government agencies: Environmental Protection Agency, Occupational Safety & Health Agency, the Consumer Products Safety Commission and

Continued on Page 24

## House Okays an Overhaul Of Nation's Pesticide Law

The House voted 320-4 Friday in favor of sweeping legislation to overhaul the nation's basic pesticide law after rejecting an attempt to double the fees agricultural chemical companies would be required to pay to re-register their products.

But in doing so, the chamber invited a veto from the White House by leaving the bill \$50 million short of fully covering the cost of the Federal government's re-registration program.

Aimed primarily at strengthening public health protections, the bill to reauthorize and revise the Federal Insecticide, Fungicide & Rodenticide Act would accelerate Environmental Protection Agency's review, or re-registration of 600 pesticide chemicals that were approved for use before November

1984, but have yet to be fully tested for their health effects.

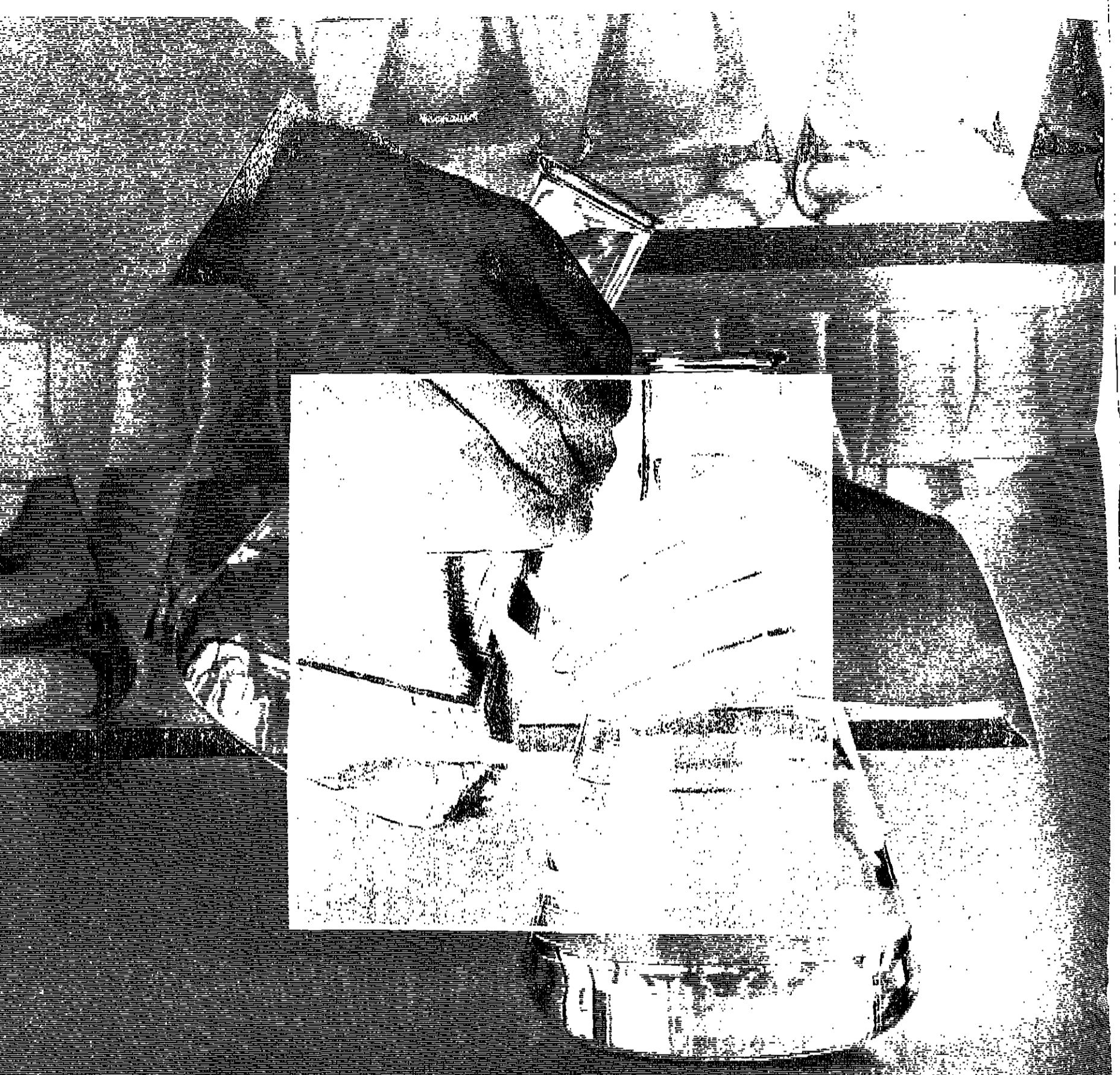
A fee of \$150,000 would be charged for the re-registration of each active ingredient, to be paid collectively by pesticide producers. Expected to produce about \$5 million per year, the fee would partially pay for EPA's re-registration effort.

EPA estimates that the nine-year program will cost \$200 million. The agency has budgeted \$110 million toward the effort, with the fees expected to bring in an additional \$45 million.

That leaves a shortfall of \$45 million — a gap the Reagan Administration believes should be filled by industry. The administration fees on pesticide products.

In an effort to resolve the dispute, the House

Continued on Page 70



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## News Capsule

### Du Pont Gets Drug Unit

E.I. du Pont de Nemours & Co. has completed its acquisition of the American Critical Care unit of Baxter Travenol, Inc. (CMR, 7/14/86, pg. 3). The unit has been renamed Du Pont Critical Care, Inc., and will operate as a subsidiary at its present headquarters near Waukegan, Ill.

### Monsanto in Nylon Push

The fiber division of Monsanto Company will launch its new stain-resistant nylon carpet fiber during a series of three-day meetings beginning October 15 in Pensacola, Fla. About 500 major carpet retailers are expected to attend R&D efforts on the fiber begun in 1981, mill evaluations have been run since early 1985 and production quantities have already been shipped to 14 major carpet producers.

### Fungicide Unit Acquired

Pennwalt Corporation has acquired a dithiocarbamate fungicide production facility in northern Spain, owned jointly by E.I. du Pont de Nemours & Co. and Energia e Industrias Aragonesas SA. Terms of the acquisition were not disclosed. The facility will be used to supplement existing overseas production at Pennwalt Holland in Rotterdam.

### Novo Opens Enzyme Plant

Novo Biochemical Industry Japan Ltd., a wholly-owned subsidiary of Denmark's Novo Industri AS, has opened its industrial enzymes production plant at the Ishikari Bay New Port Industrial Complex in Hokkaido, Japan. Completion of the plant gives Novo six enzyme production facilities: three in Denmark, one in the US and one in Switzerland.

### Tax Cut Fosters Imports

A Conference Board study says tax cuts embedded in new tax-reform legislation will act to support the huge wave of imports into the US, further inhibiting any decline in the nation's \$150-billion trade deficit. The deficit is being fueled by massive real consumption which totaled \$2.4 trillion in the second quarter, up 6.5 percent from the first quarter.

### P.R. Facility Opens

PCM Corporation, a subsidiary of Berwind Industries, Inc., Waukegan, Ill., has started pharmaceutical packaging operations in Humacao, Puerto Rico. The expansion follows one on the island by Key Pharmaceuticals, a major PCM customer. The new unit concentrates on blister and strip packaging, as well as bottling of solid oral capsules and tablets.

### Pharmacia Wheels, Deals

Pharmacia AB and Electro-Nucleonics, Inc., Fairfield, N.J., have closed a contract for ENI to purchase US distribution rights to Pharmacia's allergy and other diagnostic lines. ENI says it will realize \$10 million to \$12 million from the transaction this year. In another agreement, Pharmacia and Allergologisk Laboratorium AS of Denmark will coordinate operations within the allergy field.

### Military Boosts Plastics

High-performance plastic materials for use by the US military will boost the value of plastic parts going to the market over the next few years, according to a new study by Business Communications Company, Stamford, Conn. A 13 percent a year growth in value is projected to 1990.

### Enzon Asks FDA Approval

Enzon, Inc., South Plainfield, N.J., has filed with Food & Drug Administration for approval to begin human trials using two of its modified enzymes — polyethylene glycol-superoxide dismutase and PEG-catalase.



David J. Phillips, who has been appointed president of Alcolac, Inc. Prior to joining Alcolac, he was general manager of the Houdry Division of Air Products & Chemicals, Inc.

## Dow and Utility in Accord on Co-generation

Dow Chemical Company and Consumers Power, Inc. reached an agreement in principle last week to jointly convert Consumers Power's idled Midland, Mich., nuclear power plant into a natural gas combined-cycle cogeneration plant.

If the agreement is carried through, the plan would end a protracted and costly legal battle the two companies have waged against each other over the problem-ridden nuclear facility.

The preliminary deal calls for Dow to become an equity partner in the project. Dow would also receive the steam and electrical needs of its giant Midland complex from the cogeneration facility.

The natural gas combined-cycle project is expected to qualify under the Federal Public Utilities Regulatory Policy Act as a cogeneration facility, the two companies said in a statement last week.

The law was enacted by Congress to encourage development of electrical generating plants that can produce both steam and electricity.

## Senators Plan On Safeguards For Superfund

Sen. Frank Lautenberg (D-N.J.) Thursday said he intends to join in introducing a bill to ensure that the community right to know and other programmatic provisions of the superfund conference agreement do not get lost in a last minute congressional stall or showdown with the Reagan Administration.

Sen. Lautenberg says he would prefer to see a complete superfund package considered by Congress as soon as possible. However, the tax portion of the reauthorization bill is stalled in conference.

A staff member of the tax-writing House Ways and Means Committee says she would be "surprised" if conferees find time to work on superfund before the tax reform bill is cleared by Congress and sent to the White House. "Nobody has time to think about superfund," she says.

"I'm disappointed the tax conferees have not had a chance to meet," Sen. Lautenberg told reporters. "But, if we are backed up against the wall and have to choose between

Continued on Page 69

## Tall Oil Is Tracking The Drop in Pine Use

Availability of crude tall oil from the US's southern mills isn't going to increase over the next five years, so producers must look to recovery processes if the industry wants to increase supply, says David Wang, senior vice-president of International Paper Company.

Speaking before the Pulp Chemical Association's thirteenth international naval stores meeting in New York last week, the IP executive predicted reduced pine elements in each of the six major product categories which add up to at least 90 percent of southern paper mill production.

The pine component will be cut in half in both bleached board and newsprint and fall from 85 percent to 60 percent in linerboard, he says. Lower pine content due to substitution will impact on packaging papers, printing papers and market pulp.

As a result, Mr. Wang says an expected 2.5 to 3 percent annual growth in paper demand will be offset and will keep crude tall oil availability from southern mills at its current level of 900,000 tons per year.

"Given these structural constraints, the most promising avenue for increasing supply may reside in recovery," he says. He cites high levels of variability in CTO recovery, in terms of pounds of CTO per dry ton of pine, ranging from "the teens to the forties."

The reasons for the variability are highly mill-specific, and improved recovery gener-

ally requires changes in operation or equipment, or both," he says.

He asserts that in his own company's mill system, an estimated 20 percent improvement in recovery is "technically feasible," but he goes on to say that it is unclear whether "adequate financial incentives exist for this increment of recovery."

David Luke 3rd chairman and chief executive officer of Westvaco Corporation, said that the key to continued viability of tall oil in a highly competitive environment is an expanding commitment to technology.

"Technology will provide an answer, but only if we recognize that merely applying technology to our processes will not be enough. In my view, we have to steadfastly maintain our commitment to process technology, while at the same time increasing manifold our commitment to technology which will support innovation and market development by aggressive new product offerings from our field," he says.

Citing competition from petroleum derivatives and agricultural oils, now coming increasingly from less-developed parts of the world which vigorously push their products onto the world market, Mr. Luke emphasizes downstream products in the tall oil industry.

"Increased technical focus on products that are derivatives of our basic commodities has been a relatively recent occurrence in the tall oil industry...The time is now at hand

Continued on Page 19

## FDA Okays Patch

Food & Drug Administration has approved a low-dose estradiol skin patch that some physicians think could vastly change the way millions of women are treated for menopausal symptoms.

The patch, to be marketed by Ciba-Geigy under the brand name "Estraderm" (estradiol transdermal system) is transparent and about the size of a silver dollar. It contains 17-beta estradiol, which is identical to estrogen produced naturally before menopause.

Small amounts of estrogen are released directly into the blood stream at a relatively constant and controlled rate, and the patch is considered the first pharmaceutical product to closely mimic a pre-menopausal woman's natural estrogen levels, which are undesirable. Injections can do the same.

However, according to Dr. Howard Judd, of UCLA's school of medicine, "the patch may avoid these problems while effectively relieving hot flashes and related menopausal symptoms," because the patch-delivered estrogen is not initially processed in the liver.

## US Is Mulling New Curbs On Alachlor Corn Herbicide

In some intensive corn-growing areas of the Midwest, posing a potential threat to drinking water supplies.

Other agency officials, however, say a suspension is unlikely, but additional safeguards to protect applicators may be ordered.

Dr. John Moore, EPA's assistant administrator for pesticides and toxic substances, says alachlor has been found in groundwater in Nebraska and Iowa, and also has been detected in surface water in several locations from runoff, particularly in Iowa and Ohio.

But he says the available data indicate that relatively few drinking water sources have been contaminated by high concentrations of the chemical. Dr. Moore says EPA may announce a decision on alachlor as early as this week.

Monsanto says it remains confident that EPA's special review will support the continued use of alachlor. "There is absolutely no evidence that it is a human carcinogen," says a spokesman who also challenged the accuracy of EPA data indicating that alachlor has been found in high concentrations in some water supplies.

Monsanto believes "Lasso" does not pose unacceptable risks when used according to label instructions, he says.



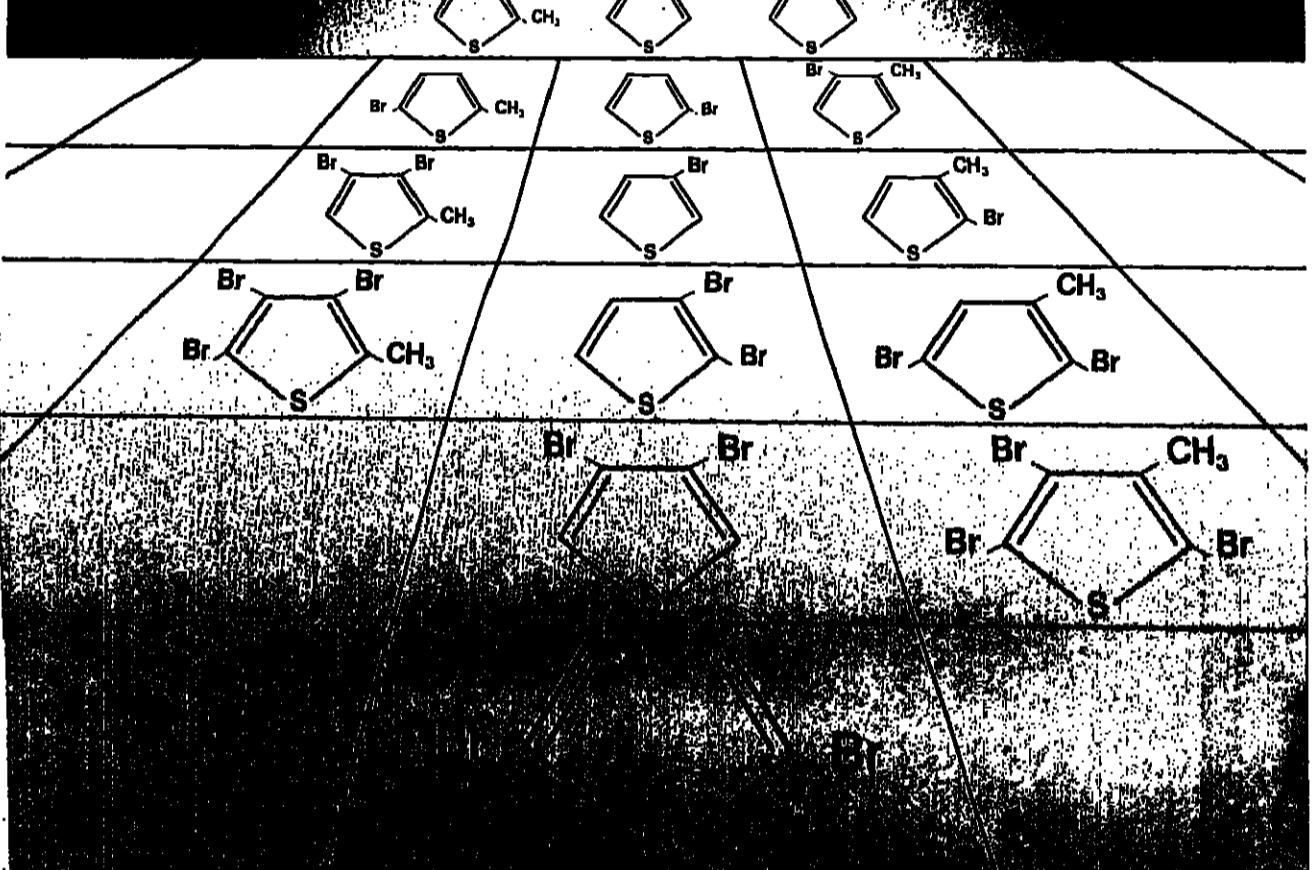


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## OILS, FATS & WAXES

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Although the Chicago area has seen healthy interest in the spot market, some

dealers are having difficulty covering sales, due in part to slower product sources say. The Eastern market, meanwhile, is also firmer due to good deals with one trader there expecting the price to rise still further.

## FISH OILS

**MENHADEN OIL** — The price of this oil quoted at 11c. per pound, crude, tank car, Atlantic Coast, and 12c. per pound, on ports, same basis.

The market continues to be weak, sales remaining at low levels. Japan, one of the main competitors of the US in menhaden oil sales, has been very quiet in the market, sources say. "Japan is still filling, but they are covering their short selection making any new offers an industry source says. Their pull-out has not helped the market due to the rise in palm oil production, he says.

Also hurting the menhaden oil market is the increasing substitution in Europe of oil for the fish oil. The trend to substitution, which began last Spring when palm oil collapsed, includes the major markets of margarine and soaps.

Further frustrating the market is the fact that oil yields here this year have been high, outstripping those last year creating a burdensome supply situation.

## MISCELLANEOUS

**COCOA BUTTER** — The spot price of cocoa butter has risen to \$2.33 per pound. The increase in price reflects very strong cocoa prices, which have turned out to be over the condition of the African crop. Bad weather over the Summer in the Ivory Coast and Ghana has caused some traders to worry about the health of the current crop. Also contributing to the strong price is the weakness of the dollar, a source says.

## Dow Completes Dioxin Study At Midland Site

A new study released by Dow Chemical Company indicates that men exposed to chlorinated dioxins in chemical production have generally experienced death rates at or below those of a corresponding United States population.

A study group consisted of 2,102 Midland-based employees at the Dow Michigan Division who had potential exposure to dioxins as a result of working with chlorinated products and derivative products some time between 1937 and 1980. Their mortality experience was evaluated through 1982. About 40 percent of the group had the skin condition called chloracne.

Results of the study will be presented next week at an international scientific symposium on chlorinated dioxins being held in Fukuoka, Japan. This research is an update of a previous dioxin health investigation released last year, the company says. In addition to focusing on 2,3,7,8-tetrachlorodibenzo-p-dioxin, considered by many to be the most toxic dioxin, the study evaluated the potential effects of the higher chlorinated dioxins. A separate analysis was also done for that group of workers who had chloracne.

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The major finding was a lack of association between dioxin exposure and increased mortality effects. In the total group, net mortality and cancer deaths were below expectation over the 40 plus years.

Furthermore, no specific type of cancer was significantly increased. Dow says a small number of analyses suggested a possible association between exposure to hexa- to octachlorinated dioxins and excess of the liver, but the interpretation is complicated because many of those who died of this disease had apparently died of other diseases.

While most turnarounds involve routine maintenance, one US unit, a 900-million-pound-per-year part of the Cosmar Company and Cosden, recently was forced to close unexpectedly due to a mechanical problem.

Spokesmen for Borg-Warner and Cosden say the unit will be out of operation for eight weeks, and as the due to arrive in September, production is expected to be down.

However, producers do say that demand

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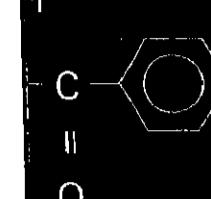
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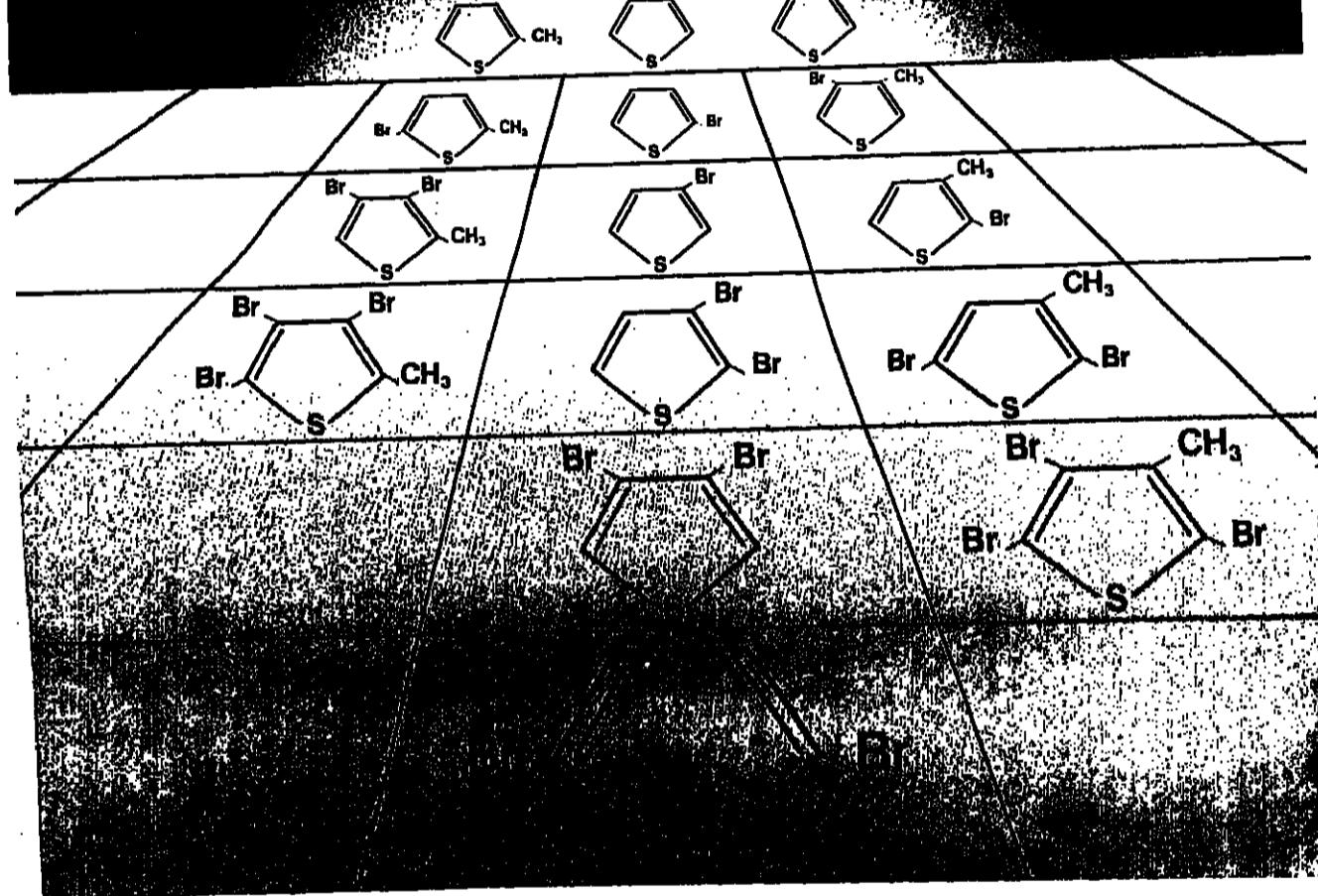
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Among those with chloracne, overall mortality was significantly lower than expected; overall mortality was to be expected, cancer mortality was to be expected and deaths due to cirrhosis were to be expected.

However, producers do say that demand

for the product is strong, particularly in the Far East, where it is used in the manufacture of insecticides and herbicides.

Producers are anxious to make a profit in styrene," this year, says one, since the last few years have been lean. "We're coming to the end of that era," he says, and another agrees, commenting that strong demand, by "straining capacity" next year, will continue to induce higher pricing.

With the latest round of increases coming so closely on the heels of the previous one, it is said that the market is rather unsettled, and that the market price is "scattered."

Amoco Chemicals Company says that its new market price, effective September 16, is 21 cents per pound, and that its list price, effective October 1, will move up 1 cent per pound to 22 cents per pound.

Arco Chemical says that it is bringing both market and list pricing up 3 cents per pound, effective October 1, with the market price moving to 24 cents per pound, and the list price moving to 27 cents per pound less a 3 cents per pound temporary voluntary allowance (TVA).

Borg-Warner Corporation and Corden Chemical both say they are raising list pricing to 27 cents per pound less a 3 cents per pound TVA, effective October 1.

### DOW RAISING LIST

Dow Chemical USA is increasing its list price by 2 cents per pound to 26 cents per pound, and off-list pricing by the same amount, not to exceed list price, effective October 1.

This year's entries into the styrene market, Huntsman Chemical Corporation and Sterling Chemicals, were among the last to announce price moves.

Huntsman will be going October 1 to a list price of 25 cents per pound less a 3 cents per pound TVA from a price of 22 cents per pound less a 2 cents per pound TVA. Huntsman says it expects its selling price to equal its effective list price of 22 cents per pound.

Sterling says it will post a list price of 28 cents per pound October 1 in an effort "to get its first list price established." The company says its first list price reflects the firmness in the market this month.

Producers say they did not encounter a significant amount of resistance with the September 1 price increase. Although there is some concern that the recent levelling off in the benzene spot market could pose some difficulty with the latest round, they expect market tightness to support the move.

As an indication of the snug situation, according to one producer, at least two rivals were unsuccessful in attempting to borrow material recently while their plants were experiencing downtime.

Downtime in the industry is said to be playing a fairly significant role in the market. There have been a number of shutdowns involving maintenance problems and turnarounds, beginning in Europe during the Spring. Europe is still tight, and now the US is getting tight (with a number of plants down) or scheduled to go down, one producer comments.

While most turnarounds involve routine maintenance, one US unit, a 900-million-pound-per-year part of the Cosmar Company and Corden, recently was forced to close unexpectedly due to a mechanical problem.

Spokesmen for Borg-Warner and Corden say the unit will be out of operation for eight to 10 days following the shutdown September 10.

However, producers do say that demand

## AROMATIC ORGANICS

### Styrene Makers Raise Ante With an October 1 Advance

Styrene producers, flush with the success of a September 1 industrywide price increase, say they will again raise prices October 1.

Producers say much of the upward pricing movement involves the passing through of higher feedstock benzene costs. However, strong demand worldwide from the polystyrene sector, which accounts for about 55 percent of consumption, is said to be boosting operating rates in the industry and creating a market picture that gives producers a better chance to improve margins.

Producers are "anxious to make a profit in styrene," this year, says one, since the last few years have been lean. "We're coming to the end of that era," he says, and another agrees, commenting that strong demand, by "straining capacity" next year, will continue to induce higher pricing.

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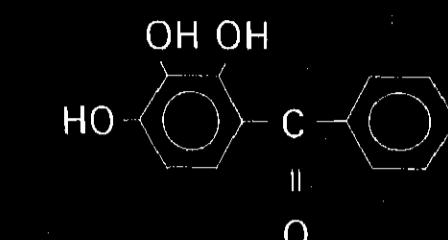
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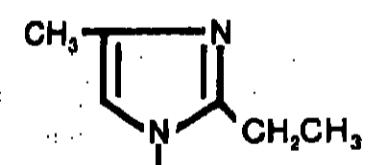


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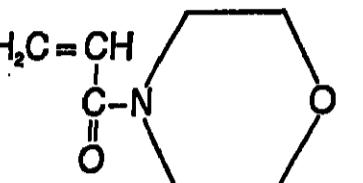
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## Chemical Finance

### American Home Buying Chesebrough Business

American Home Products Corporation, New York, has signed a definitive agreement to purchase the Hospital Products Division of Chesebrough-Pond's Inc. for \$260 million. Products include nutritional feeding and cardiopulmonary devices, thermometers, continence control products, treatments for wounds and various personal care items.

### Cyanotech Shares Are Listed on NASDAQ

Trading has begun in the shares of Cyanotech Corporation on the automated quotation system of NASDAQ, which has become the nation's second largest and fastest growing securities market.

### Dow, Great Lakes Boosts Dividends

Dow Chemical Company and Great Lakes Chemical Corporation have announced dividend increases on their common stocks. Dow's new dividend is 50 cents per share, up 5 cents, and payable October 30 to holders on September 30. Great Lakes' dividend is 1 cent per share, up 14 cents, payable October 28 to holders on October 1.

### Vega Biotechnologies' Results Improve

Vega Biotechnologies Incorporated, Tucson, Ariz., improved its results markedly in the first fiscal quarter ended July 31. Sales were up 45 percent to \$14.9 million from \$8.4 million a year earlier, and the net loss decreased 60 percent to \$156,000 from \$500,000. Research for E.I. DuPont de Nemours & Co. accounted for \$219,000 of the increase in revenue and is expected to continue at that level throughout the remainder of the fiscal year.

### ImmunoGenetics Divests Unit, Plans Acquisition

ImmunoGenetics, Inc., Vineland, N.J., has sold its "Surge-Cream" line of skin products to American International Industries, Hollywood, Calif., for \$2.75 million cash and secured notes. Meanwhile, ImmunoGenetics continues negotiations to acquire privately held pharmaceutical company that holds rights to some 60 ethical and dermatological preparations for humans and animals.

### Montedison's Iniziativa Has Profit Increase

Iniziativa ME T.A., the services sector of the Montedison Group, raised its net profit in the first half of 1986 to the equivalent of \$17.2 million from \$17.1 million a year earlier. Dividends from companies in which Iniziativa ME T.A. holds an equity position declined to \$11.9 million from \$16.9 million a year earlier, reflecting a divestment.

### Pantasote to Repurchase 1.6 Million Shares of Stock

Pantasote Inc., Greenwich, Conn., has entered into an agreement to repurchase 1.6 million shares of its common stock from the Wyman family for an aggregate price of \$10 per share, totaling \$12.8 million, in cash, plus shares of convertible preferred stock with an aggregate liquidation value of \$3.2 million and a cumulative dividend of 8 percent per year.

### Research-Cottrell Declares Dividend

Directors of Research-Cottrell Inc., a diversified engineering company based in Somerville, N.J., have declared a dividend of 8 cents per pound on the capital stock.

### Shell Transport Raises Dividend 8 Percent

Directors of Shell Transport & Trading Company PLC, London, England, have declared an interim dividend of 64 pence per New York share (one New York share equals four ordinary shares), an increase of 8 percent over 50 pence a year earlier, payable November 17 to holders on October 2. The amount to be paid to holders in US currency will depend upon the exchange rate on November 8. At the current rate of \$1.48 to the pound, the dividend would be \$1.13 per share.

### Imperial Adhesives Acquires S-W Business

Imperial Adhesives, Inc., Cincinnati, Ohio, has acquired the industrial adhesives business of Sherwin-Williams Company, including customer lists, formulas and related technology, effective September 1.

### Standard Oil to Issue \$150 Million of Notes

Standard Oil Company, Cleveland, Ohio, has agreed to issue \$150 million of fixed, non-callable, 7-year notes through Salomon Brothers Incorporated, under an existing shelf registration. The notes will be issued at 100 percent, and proceeds will be used for general corporate purposes.

### Syntex Sells Dental Business to New Company

Syntex Corporation, Palo Alto, Calif., has signed a contract for the sale of its dental business, Syntex Dental Products Inc., to a newly formed company, Dental Products Corporation, controlled by Raymond G. Perlman, Mr. Perlman is a private investor with interests in a number of manufacturing businesses, including Chayes Virginia Inc., a dental equipment manufacturer. The sale is expected to be consummated in late October.

### Alcoa to Redeem Outstanding 13% Pct. Debentures

Aluminum Company of America will redeem all of its outstanding 13% debentures due 2011 at a price of 110.440 percent of the principal amount plus accrued interest to October 17, 1986. The bonds may be redeemed at the option of Company of New York and/or Pittsburgh National Bank.

### Eli Lilly Applies for Tokyo Stock Listing

Eli Lilly & Co., Indianapolis, Ind., has applied to list its common stock on the Tokyo Stock Exchange. Nikko Securities Company is sponsoring the listing, which is to be effective in the fourth quarter. Lilly entered the Japanese market in 1970 and is in that country through several subsidiaries and joint ventures.

### IMS International Declares Dividend of 3 Cents

IMS International Inc., New York-based multinational provider of medical, personal care services, including market research, medical publications, operations and toxicological testing, said its board of directors has declared a 3 cent per share on the company's common stock, payable September 30, 1986, September 12.

## AROMATICS

Continued from Page 13

has slackened a bit since the first half of the year, and are concerned about growth prospects for next year.

It is believed that the new tax structure, if implemented, will reduce the incentive for commercial construction, and could lead to a flat rate of growth in 1987.

Further complicating the picture in 1987 will be the debottlenecking of BASF Wyandotte Corporation's Geismar, La. plant, from 100 million to 155 million pounds per year.

The company says it expects to be operating at the highest capacity by mid-1987. Spokesmen note that when the plant came on stream earlier in the decade, much of the equipment necessary to operate at 155 million pounds per year was already in place.

The company says that, while some equipment modifications may be needed before the plant can begin operating at the higher rate, the mid-1987 target date represents not the length of time required to make the

change but rather the company's schedule at present.

An earlier date for the startup of the additional capacity is not ruled out, and some industry sources say they expect it to happen closer to the first of the year.

Producers note that a portion of BASF's additional product will likely be used to supply the parent company in Germany. "They have had some problems over there with downtime, and the market is quite active," comments one producer.

It is observed that export demand for MDI is fairly strong, and operating difficulties in Europe have contributed to making the market fairly tight worldwide. US product is said to be moving primarily to Canada, Mexico, South America, and the Far East.

PHTHALIC ANHYDRIDE — Koppers Company, Inc. and USS Chemicals say they are raising prices for the fourth quarter. Effective October 1, Koppers is moving up 1¢ per pound on selling prices, and USS Chemicals is reducing all competitive allowances on molten and flake material by 2¢ per pound.

USS Chemicals attributes the change to rising feedstock costs and "the need to restore an equitable return to the product." A week earlier, BASF Wyandotte Corporation and Stepan Company announced 1¢ per pound price increases on molten and flake material for October 1.

## INTERMEDIATES

### Benzoic Acid

### Benzotrifluoride

### Benzoyl Chloride

### Benzyl Alcohol

### Benzyl Chloride

### Benzylidene Acetone

### Meta-Nitrobenzaldehyde

### Ortho-Nitrobenzaldehyde

## CATALYSTS

### Paramenthane

### Hydroperoxide (PMHP)

### Pinane Hydroperoxide (PHP)

## INHIBITORS

### Potassium Benzoate

### Sodium Benzoate

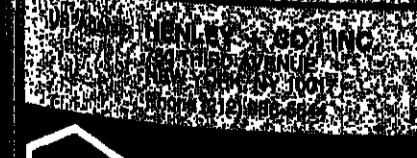
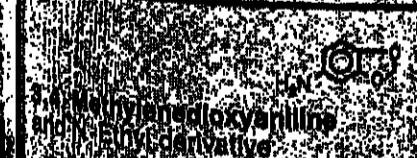
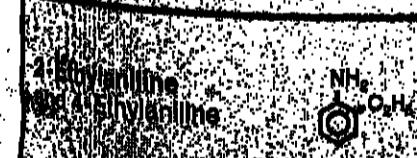
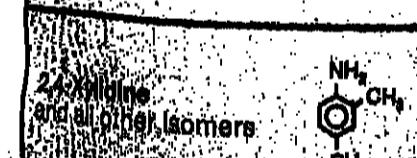
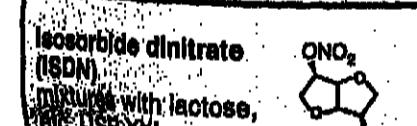
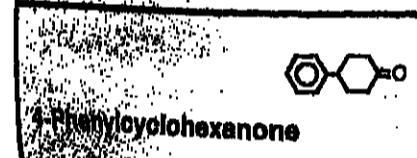
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## Hazardous Material Accidents To Be Counteracted by Computer

The chemical industry last week unveiled a computerized information system to help fire departments and other emergency services respond to accidents involving hazardous materials.

The system, called "HIT" — Hazard Information Transmission — was developed for the industry's fifteen-year-old Chemical Transportation Emergency Center (Chemtree).

Chemtree is a 24-hour emergency hotline service. According to Chemical Manufacturers Association, it gives firefighters, hazards and appropriate actions to take to deal with fires, spills or leaks of the products. The HIT system was designed to speed access to the information maintained by Chemtree.

The heart of the HIT system is a computer

program developed for the CMA by AT&T, far, information on more than 1,700 commercial chemicals — generally chemicals produced and shipped in large quantities to United States — has been put into the system. Eventually, data on more than 4,000 chemicals will be maintained in the system. Ok says.

The system gives emergency services personnel at the scene of an accident a hardcopy printout of the information maintained by Chemtree. Until now, communication between Chemtree and personnel at the scene of an accident has been oral, via telephone lines.

CMA president Robert A. Roland says new computer link between Chemtree and emergency services around the country allows information to be relayed much more quickly and accurately. In addition, we relay more information.

The system has been tested in six areas: Chicago, Jacksonville, Fla.; Fort Collins, Colo.; Fullerton and Corona, Calif., and Prince George's County, Md.

Mr. Roland says the industry began establishing Chemtree 15 years ago "to give quick, accurate information to emergency service personnel." And that idea has not changed, he says.

Although Chemtree was originally established to assist in transportation risks, last year Chemtree's services were expanded to provide information for non-transportation emergencies as well. Chemtree is based in CMA's headquarters in Washington.

Chemtree is one of four programs to make up the industry-funded National Chemical Response and Information Center, which was established in early 1985.

The other elements of the NCRIC are: The Chemical Referral Center, The center through a toll-free number, 800-263-8200, is source for non-emergency information on chemicals and their hazards. The center, which began operation in December 1985, has responded to more than 6,700 requests for information.

Chemnet. This nationwide, mutual-aid system is made up of 213 emergency response teams: 163 are chemical industry teams; the others are private contractor teams. The teams are available to provide technical assistance in the scene of transportation accidents.

The Chemical Referral Center and Chemnet both have emergency response training programs.

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\*Ethylene Glycol Monomethyl Ether

## ALIPHATIC ORGANICS

### Linear Olefins

Continued from Page 3

density polyethylene is expected to reach 34 billion pounds, this year, 1980 demand will rise modestly to 35 billion pounds according to industry forecasters.

However, continued inroads made by LDPE into LDPE will bring linear material up from its current 20 percent share of the demand to a 30 percent share of the requirement by 1990.

"New LDPE plants being built around the world and higher operating rates at existing plants will spur strong growth through 1990," says one US marketer.

Demand growth, as strong as it is, has been moderated by the cost of LDPE plants, says the marketer. Polymer producers will maximize their use of blends in order to minimize costs while taking advantage of the properties offered by the linear polymer.

While linear olefin demand growth due to increased LDPE requirements will affect C<sub>4</sub> through C<sub>10</sub> olefins, C<sub>12</sub> through C<sub>18</sub> cuts, used primarily in detergent applications, should see growth only in the 2 to 3 percent range.

Producers have been looking to underdeveloped nations to expand their use of detergents based on olefin raw materials. However, growth has so far been stemmed by the high cost of olefin-based facilities.

In the US, strong demand for linear olefins has aided prices. First quarter price increases of 2½ cents per pound on average have been successful, according to sources.

Current list prices are 28½ cents per pound for C<sub>4</sub> material and 40 cents to 46½ cents per pound for C<sub>6</sub> through C<sub>18</sub> materials. Multiple cuts of higher than C<sub>20</sub> material are list priced between 39 cents and 40 cents per pound.

ACRYLATES — Rohm and Haas says it will raise selling prices on acrylic acid, (glacial and flocculant grade), n-butyl acrylate and ethyl acrylate by 3¢ per pound on October 1.

New selling prices, according to the company, will be 49.5¢ per pound for n-butyl acrylate, 47.5¢ per pound for ethyl acrylate, 48¢ per pound for glacial acrylic acid and 51.3¢ per pound for flocculant grade acrylic acid.

All prices are f.o.b. plant and minimum freight allowed.

BRAKE FLUIDS — ICI Americas says it will increase all brake fluid prices by 25¢ per gallon on October 1. "The price increase is the result of increasing value and decreasing availability of ethylene glycol ethers, the major raw material used in brake fluids," according to ICI.

### ALIPHATIC ORGANIC EXPORTS: JULY

BUREAU OF CENSUS FIGURES IN POUNDS ON THE KEY ALIPHATICS

	JULY		JUNE	
	QUANTITY	\$ VALUE	QUANTITY	\$ VALUE
Acetic Acid	24,098,104	2,768,864	16,424,860	1,695,632
Acrylonitrile	10,597,929	2,355,940	3,089,612	554,524
Acrylic Acid	62,185,004	1,409,183	95,100,000	25,500,369
Butane	5,492,177	2,823,000	7,750,411	2,545,662
Butene	15,739,510	2,823,000	21,338,580	4,495,387
Ethyl Acetate	17,739,581	3,795,807	8,121,775	1,864,571
Isobutene	7,559,328	1,944,307	3,878,920	1,041,182
Chlorinated Hydrocarbons	1,524,681	784,481	1,379,987	748,876
Ethanolamine	5,032,698	1,881,108	9,191,388	1,758,481
Ethyl Acrylate	10,181,032	2,740,344	16,143,658	5,257,600
Ethylene Alcohol	7,208,574	2,706,389	8,124,713	2,404,842
Ethylene Oxide	441,325	884,800	83,677	109,238
Ethylene Glycol	55,678,784	5,834,288	15,898,813	603,844
Formaldehyde	38,016,601	6,149,831	44,907,851	7,045,975
Glycerine (Crude)	1,028,480	133,748	1,003,516	100,532
Glycerine (Refined)	135,946	78,028	101,046	135,335
Glycol	1,034,602	889,028	380,097	258,000
Methanol	8,078,685	5,144,372	3,164,566	1,942,185
Methyl Acrylate	5,072,685	1,545,010	3,922,958	1,371,277
Methyl Acrylate	4,426,700	1,579,443	7,446,451	1,774,540
Methyl Acrylate	5,532,410	3,298,366	6,305,182	2,812,121
Methyl Acrylate	5,895,402	3,298,366	6,305,182	2,812,121
Methyl Acrylate	12,557,483	2,162,017	2,665,382	563,000
Polyacrylate	2,084,082	235,921	1,071,083	346,998
Polyethylene Glycol	696,284	685,781	690,153	414,998
Propyl Alcohol	14,345,983	5,807,067	18,981,987	7,811,987
Propylene Glycol	19,406,602	2,638,384	20,938,000	2,666,666
Propylene Glycol	11,182,583	3,832,001	6,228,000	1,774,208
Tetrahydrofuran	6,702,572	2,764,087	4,707,078	1,028,859
Vinyl Acetate	7,875,784	2,001,336	12,451,020	3,578,081
Vinyl Chloride	85,147,988	35,785,020	68,802,731	10,404,845
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## DRUGS & FINE CHEMICALS

### Sulfamethazine Demand Slumping Amid Growing Residue Concern

Sulfamethazine depression continues to deepen, and few observers are optimistic that the situation will change soon.

Sulfamethazine's cost has eroded for about two years, but most sources believe the price has bottomed out between \$9 and \$10 per kilogram. About two years ago, the price was between \$12.00 and \$12.50 per kilogram.

During the past year, a decrease in demand had caused an oversupply, helping drive down pricing. Now, because of oversupply, companies are existing off inventory, and less material is being imported.

January through July import figures show a 35 percent drop in imports, compared to the same period in 1985. About 955,000 pounds have come to the US through July, compared to about 1.5 million pounds through July 1985.

Almost all exporters to the US have sent substantially less this year. Yugoslavia, the largest exporter, has sent 27 percent less sulfamethazine here through July.

China's total has dropped by 56 percent, Germany by 47 percent, and Hungary's by 26 percent.

#### DENMARK INCREASES EXPORTS

Only Denmark has increased its exports this year, sending 11 percent more. One source says this is because the Danish material is especially suitable for veterinary purposes, such as horse pills. This segment, although minor, is not shrinking, according to the source.

Sulfamethazine's major use, however, as a feed additive in swine and cattle feeds, is shrinking. Some observers cite the popularity of poultry and fish, but most admit that concern about residue is the main factor.

Residue problems have been talked about for years, but sources say that recently the concern has grown, partly because of increased media exposure, which one source terms "sensational." Farmers should not slaughter an animal until 10 to 15 days after it has consumed sulfamethazine, say observers, because if the slaughtering is done in advance, there is often a sulfamethazine residue, which causes allergic reactions in some people.

A Food & Drug Administration spokesman says that because some people react to the residue, "we can't take chances." The legal limit of allowed residue is 0.1 part per million.

Carcasses are routinely examined, and those with high residue levels are discarded. The spokesman says that, generally, samples of the carcass are taken, and the rest of the carcass is allowed to continue being processed. If the sample has high residue levels, the rest of the carcass is recalled.

Sulfamethazine sources say they are

equally concerned about residue problems, but do have some complaints. One source, for example, insists that "the government has residue levels at (a) ridiculous rate." Another source says that, because of publicity, the residue problem is "becoming a political, not a scientific issue."

He further notes that "the FDA is under a

#### PRICES TRENDLINES

WEEK ENDING SEPT. 19, 1986

#### CHANGES/UP

None

#### CHANGES/DOWN

None

#### DRUGS INDEX

The Drugs & Fine Chemicals Index reflects the prices of 10 representative materials in this sector and the quantity of each produced in 1985.

Sept. 19, 1986 ..... 211.16

Sept. 12, 1986 ..... 211.16

Aug. 22, 1986 ..... 211.16

Sept. 20, 1985 ..... 211.16

*Chemical Prices Start on Page 52*

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## DRUGS & FINE CHEMS

ing the import of butylated hydroxyanisole (BHA) have thus far been unsuccessful.

BHA, as well as TBHQ, have been prevented from entering Japan for many years, because of concern that they may be carcinogenic. However, early in 1986 some producers speculated that by September, the position may be changed. This has not happened.

And, even if it eventually does happen, social acceptance is bound to be slow in coming. The talk of acceptance has come about recently because of the findings by some Japanese scientists, who approve usage of the antioxidant.

The two domestic sources of BHA, Eastman Chemical Products, Inc., and UOP, Inc., account for almost all domestic requirements. One of the companies carries list prices of \$8.55 per pound for 5,000 pounds and more, \$8.80 per pound for 1,000 to 5,000 pounds, and \$9.80 per pound for 800 to 1,000 pounds. These prices are called stable, and are not expected to change.

**ERYTHROMYCIN** — Abbott Laboratories' erythromycin antibiotic "PCE" has received Food & Drug Administration approval. The approval came in early September, and Abbott has already begun to market the product.

"PCE," which stands for polymer-coated erythromycin, was developed to provide rapid absorption of erythromycin and at the same time minimize stomach acid. Erythromycin is used for bacterial infections, and especially the treatment of respiratory infections.

A spokesman notes that "PCE's" main advantage is that the polymer coating on the erythromycin particles protects from stomach acid. The spokesman estimates the worldwide erythromycin market to be about \$300 million. The list price of "PCE" is \$21.00 for 60 tablets, to pharmacies.

**MEDICINAL PRODUCTION** — Aspirin production rose by about 20 percent in second quarter 1986, compared to the first quarter, according to US International Trade Commission. Production was 7,125,000 pounds, compared to the first quarter's total of 5,830,000 pounds. However, this second quarter figure represents a slight drop from the 7,198,000 pounds produced in second quarter 1985. Likewise, the production total for the first two quarters of 1986 was 12,955,000 pounds, down from 14,758,000 pounds for 1985.

Meanwhile, choline chloride production was up about four percent in the second quarter, rising to 13,659,000 pounds, up from the first quarter figure of 13,021,000 pounds. The

second quarter figure is up from the first quarter of 1985's 11,352,000 pounds. Production for the first two quarters is also up than it was in 1985. Through second quarter 1986, 26,580,000 pounds had been produced compared to the 1985 total of 24,791,000 pounds.

**MSG** — Chell Sugar Company, a major source of monosodium glutamate from Korea, is increasing its export price to the US, four to five cents per pound. The increase is said to take effect immediately.

According to an importer of MSG, Chell is the US's largest source of Korean produced. Meanwhile, spot prices for MSG are firm, and further increases are expected with most contracts are renegotiated after January 1.

## Conoco, Nippon Form Venture

Conoco and Nippon Mining Company Ltd. of Tokyo will join in a \$135 million joint exploration venture on selected Conoco acreage in the US and Gulf of Mexico. The venture is the first with a Japanese firm for the North American exploration arm of Conoco.

Conoco, a subsidiary of E.I. du Pont de Nemours & Co., will be the operator of the program, which calls for about 10 exploratory wells to be drilled in Texas, Louisiana, Colorado, Montana, Alabama and offshore Louisiana.

Six of the wells will be onshore and the remainder will explore offshore areas. The program also includes leasehold acquisitions and seismic activities.

"We expect to drill the first well in the Gulf of Mexico's Green Canyon area," said Max G. Pitcher, vice-president of Conoco's North American exploration operation. Nippon Mining will open an office in the Houston area as a result of the agreement. Since 1986, Conoco and Nippon Mining have been partners in a petroleum coke manufacturing facility in Japan.

The agreement, signed last week by Pitcher and Takashi Sakamoto, managing director of Nippon mining, is expected to bring employment to drilling contractors and others in the five state area.

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## Canada Pact Could Receive Chemical Assent

The US chemical industry would support a free trade agreement with Canada if certain "fair and equitable conditions" can be met, an industry trade expert says.

Myron T. Foveaux, trade and economic policy advisor for the Chemical Manufacturers Association, told representatives of the United States Trade Representative these conditions include:

- Balanced benefits in chemical concessions to both the US and Canada. Currently, Mr. Foveaux says, "US average bilateral trade weighted chemical tariffs on Canadian imports are less than half those on US exports to Canada."

- Non-tariff trade barriers, such as inadequate protection of intellectual property rights, must be corrected, he says. "Recently announced changes in Canadian drug laws do not adequately address the problem," he adds.

- US import remedy laws and procedures should be suspended under any agreement with Canada.

- There should be an adequate and binding dispute settlement provision, Mr. Foveaux says, "including time limits and provision for private sector input."

Mr. Foveaux explains that this country's chemical industry exports are \$22 billion annually, or about 10 percent of the industry's total sales.

"Although it is one of the few industries still providing a trade surplus to the nation's over-all growing trade deficit, that surplus is decreasing annually," Mr. Foveaux notes. "And the Department of Commerce estimates the chemical trade surplus will diminish again this year." US chemical trade with Canada leads all other countries.

The Office of Chemical Industry Trade Advisor is a coalition made up of Chemical Manufacturers Association, Synthetic Organic Chemical Manufacturers Association, Society of the Plastics Industries and the National Agricultural Chemicals Association.

## Roche Sues

Continued from Page 5

The court in August, Amgen's brief asked the court to determine that its own production of a biengineered interleukin-2 product does not infringe Cetus's patents.

Cetus says it holds the only US patents on interleukin-2 and its analogs made by genetic engineering. "By seeking a declaration that it was not infringing Cetus' patents, Amgen has revealed its uncertainty about its own position," claims Robert A. Filides, president and chief executive officer of Cetus.

"Proleukin" interleukin-2, an analog form of interleukin-2 created by Cetus is currently in advanced human clinical studies around the US.

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## Formaldehyde Makers

Continued from Page 7

Department of Housing & Urban Development.

Eventually, overlapping jurisdictions will be eliminated as the agencies work out their own territories, but meanwhile, industry spokesmen must deal with all four, at considerable expense of time and funds.

Mr. Howlett noted that OSHA, in the rules people are preparing, has failed to make any distinction between long-term (a full shift) and short-term exposure to formaldehyde in factories. The Formaldehyde Institute has determined that 2 parts per million would be a sufficiently low limit for batch operations in which workers are exposed no more than one hour. Existing law, he said, allows 10 parts per million, as compared with 3 parts per million for full-shift exposure.

The institute, Mr. Howlett added, has approved OSHA's plan to establish "action levels." Under this proposed rule, if a plant's emissions are at only half of the permitted level, OSHA ease a number of monitoring and reporting requirements.

OSHA had expected its final rule to be promulgated in September of 1987, but Mr. Howlett believes that the date will be pushed back to January 1988, based on his previous experience with the agency.

EPA had been working on rules for workers in factories, but it will probably bow out now that OSHA is far along in its rule making, Mr. Howlett said.

EPA also has approached the problem of formaldehyde emissions from building products in mobile homes, but again it has the option of deferring to HUD in this area, since the latter has already promulgated stringent standards for homes.

Mr. Howlett noted that most of the hard-

wood plywood used in the US is now made in Indonesia, the Philippines and other Asian states. This once large market for US-produced formaldehyde (as glue) has been overtaken by the growing market for particle board as a replacement for wood, he said. Some 10 percent of US particle boards are used in mobile homes, 20 percent in conventional housing and 70 percent in industrial outlets, mostly for furniture, in which particle board is being increasingly used as replacement for wood.

Dr. Hayes questioned the scientific methods of a study by Dr. Thomas L. Vaughn and associates at the University of Washington in Seattle, which claimed to find a significant correlation between exposure to formaldehyde and development of cancer. He said most of the data were based on interviews of survivors of workers who had already died, and that there is no way to evaluate the accuracy or objectivity of such retrospective testimony. "The Vaughn study is open to a lot of questions," Dr. Hayes said.

John F. Murray, president of the institute, and Edward J. Stana, director of public affairs, said the institute may propose the convening of a blue ribbon scientific panel to review the data and draw its own conclusions.

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## Tax Reform to Worsen Deficit, Says NAM's Chief Economist

Comprehensive tax reform legislation currently before Congress "will worsen the US trade deficit and seriously undermine the competitiveness of US firms," a spokesman for the nation's manufacturers charged last week.

Jerry J. Jasinski, executive vice-president and chief economist for the National Association of Manufacturers, told the joint economic committee the tax reform proposal will have both positive and negative effects on the economy and competitiveness.

"The major positive elements of the bill include substantial tax rate reductions on individuals and businesses paying high tax rates," he testified.

"The major negatives are that revenue losses are made up primarily by removing incentives for investment, with the result that the burden of taxes will be shifted primarily onto capital intensive manufacturing firms that are heavily exposed to international competition."

The NAM economist said each piece of the reform equation — positive and negative — is inextricably tied to the next, and that each must be viewed as part of the economic whole.

"The condition of the overall economy is of great importance in determining performance in international markets," Mr. Jasinski notes.

"In this respect, based on net exports, the trade deficit feeds back into GNP growth, but at the same time is figured partially on the level of domestic consumption of imports, which depends on the growth in GNP."

"Thus, certain general economic consider-

ations, like the possibility of recession, or implications for interest rates and the exchange rate, will influence the size of the trade deficit," he says.

Mr. Jasinski also says tax reform will raise the cost of capital by large magnitudes, raising the cost of production for manufacturers with direct foreign competition. He claims this increase in the cost of capital will lower productivity growth, thereby raising unit labor costs.

"Neutral" tax reform is a misnomer when viewed on the tax treatment of income and consumption, Mr. Jasinski adds.

"The tax bill will move the tax system even further away from taxation of consumption and will further penalize savings and investment. The redistribution of \$120 billion in taxes from individuals to business will only further stimulate consumption, thereby raising the demand for imports and pushing US trade further into a hole," he says.

Congressional aides worked out the final details of the tax bill last week in preparation for a final vote in the House, perhaps this week, and later in the Senate. The outlines of the sweeping measure were agreed to by House and Senate negotiators last month.

**Rhone-Poulenc Isocyanates**

A previous report on industry expansions in aliphatic isocyanates (CMR, 9/8/86, pg. 3), failed to mention projects by Rhone-Poulenc.

The company is building a new 5,000-ton-a-year hexamethylene di-isocyanate unit at Freeport, Tex. and expanding its existing 2,000-ton plant at Pont de Claix, France, by 3,000 tons annually.



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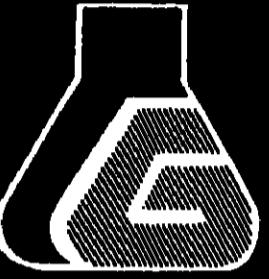
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## US Textile Imports Are Cited As Part of 'Bigger' Problem

The US import problem is "a catastrophe, not just for the domestic industry, but for America as well," according to Robert G. Laidlaw, first vice-president of the American Textile Manufacturers Institute, who maintains that at this point the US is being asked to provide fuel for economic growth in the rest of the world through loans, investment or trade.

Speaking at the 1986 annual conference of the International Textile Manufacturers Federation in Helsinki, Finland, Mr. Laidlaw told members, "there is nothing fair, equitable, orderly or even rational about the current trend of textile and clothing imports into our market."

"While our concerns may to many seem parochial and unduly protectionist, let me hasten to point out that they are merely reflective of much wider and deeper problems. Just as all 166 countries exporting textiles and garments to the US cannot each have 1 percent of our market...so, too, can the world's trading system and the free world's entire economy no longer endure the imbalances that are currently straining them to their very limits," he says.

"We cannot make any more loans until we start collecting on the ones we have already made," Mr. Laidlaw adds. "Our manufacturing industries cannot make any more investments because they are having a hard time generating the cash flow to do so and we can no longer afford to donate \$170 billion annually — this year's projected trade deficit — to the rest of the world's economies."

"Textile and apparel imports into our home market reached new record levels during 1985 — as they have for each of the last ten years — and are soaring to even greater heights this year."

Last year, Mr. Laidlaw noted, total imports were 13.6 billion square yards, 10.8 billion yards of products covered under the multifiber arrangement — cotton, wool and man-made fiber — and 2.8 billion yards worth of imports formerly outside the reach of the multifiber arrangement.

He says that current import levels repre-

sent more than 250,000 lost job opportunities for American workers. "Our trade deficit in textiles and clothing is running at an annual rate of \$20 billion."

Mr. Laidlaw says that the American textile industry remains "determined not to stand by and allow government bureaucrats to export the American standard of living."

"We in ATMI believe that the American people, speaking and acting through their Congress, will not allow that which has made the United States the most powerful nation on earth — a strong manufacturing industry — to be eroded away."

## Phosphazene Patents Filed

Polymeric "tools" for a broad variety of industrial tasks are described in new US and foreign patent applications just filed by Research Corporation, the Tucson-based foundation for the advancement of science and technology.

Developed by Drs. Harry R. Allcock and Paul E. Austin at Penn State, the "tools" are macromolecules, members of a new class of water-soluble polymers with potential use in a multitude of fields.

Known as polyphosphazenes — technically poly(alkoxyalkoxide) phosphazenes — the polymers may find application in the controlled-release delivery of drugs, fertilizers, pesticides and other compounds.

Polyphosphazene polymers are also said to be promising as foam control agents for the manufacture of paint, paper and antifreeze, for example, and in the fermentation-based manufacture of antibiotics and foodstuffs. Still other applications are pending in food processing and water purification.

The polymers are reported especially suitable for controlled release of pharmaceuticals in the body because of their biocompatibility and stability (they could be designed to slowly dissolve in the gastrointestinal tract, hydrolyzing into harmless small molecules).

## Acid Rain Legislation Unlikely As Congress Nears Recess

Supporters of an industry-opposed plan to control emissions linked to acid rain conceded virtual defeat last week in their efforts to push the controversial legislation through Congress in 1986.

"With the few weeks we have left in this session, it's unlikely we can pass an acid rain control law this year," says Rep. Henry Waxman (D-Calif.), chairman of the House energy and commerce health subcommittee. Congress plans to adjourn for the year on October 3.

The full Energy and Commerce Committee met twice to consider the Waxman bill just before the August recess, but opponents used a variety of procedural tactics to stall action, such as objecting to the panel meeting while the House was under the five-minute rule.

In the Senate, Sen. Robert Stafford (R-Vt.), chairman of the Environment and Public Works Committee, says his panel is ready to send acid rain legislation to the floor, but will delay action until there is movement in the House.

"The cards are clearly stacked against getting anything done," says a spokesman for the National Audubon Society, one of many environmental organizations backing the legislation.

The bill would give Environmental Protection Agency and the states broad discretion in regulating emissions of sulfur dioxide and nitrogen oxide, considered by some scientists to be acid rain precursors.

Of special interest to the refining and petrochemical industries, the bill calls for emissions reductions from industrial processes, and for reducing the sulfur content of diesel fuel.

Peter Sipple, manager of energy policy for Air Products & Chemicals, Inc., has testified

the bill would cause major industry expenses from fuel switching, increased transportation costs, and capital costs from installing scrubbers.

He also points out that the bill recommends subsidization of major residential rate increases at the expense of business.

According to the Congressional Office of Technology Assessment, the cost of compliance with the proposed bill could reach \$9.2 billion per year by the early 1990's.

ICI Makes Grant To Composites Lab

ICI Americas, Inc. granted \$1 million to the University of Delaware's center for composite materials for the construction of a 35,000 square-foot composites manufacturing science laboratory at the Newark, Del., campus.

The laboratory will draw together 150 people, including 74 graduate students and 23 faculty members from the chemical, civil, electrical and mechanical engineering departments, ceramics and materials science in a multi-disciplinary program to develop advances in composite materials and related sciences.

Primary effort at the laboratory will focus on finding solutions to problems encountered in composite materials production and processing, involving mechanics and design science, materials design and durability and computation software.

In announcing the grant, Harry Corless, chairman of ICI Americas, said, "The University of Delaware's Center for Composite Materials, founded in 1974, is widely regarded as being the leading center for composite research in the United States."

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## PERFUMES & FLAVORINGS

### Dillweed Oil Market Tightens As Domestic, Imports Clash

West Coast dillweed oil prices have climbed from \$6.90 per pound to \$7.25 to \$7.75 per pound in the last two weeks. Eastern European dillweed oil prices have held steady at \$6.50 to \$6.90 per pound f.o.b. New York. The lower prices of imported dillweed oil have stabilized spot prices at \$7.00 per pound.

Hungarian and Bulgarian dillweed oil, produced almost exclusively for export to the US, is underselling the US material because the Europeans are releasing the last of their 1986 carryover.

"The Eastern Europeans haven't sold all of last year's yield and are keeping the prices down," says an essential oils importer. The European dillweed oil is offered in the US because "pickles using the dillweed oil are mostly an American dietary component. Europeans don't generally eat them."

An oils broker stresses seasonal timing as being behind the European pricing: "Importers are getting rid of the old crop dillweed oil while the West Coast material is still higher, and before the new crop comes in."

The strategy seems to be working in that there are already reports of limited availability of the European dillweed oil. "Very little old crop European can be purchased right now," says another broker, "and though quantitative estimates are not available, the new crop production is underway."

#### US PRODUCTION OUTLOOK

The US production situation points to an overall tighter market. A major dillweed oil supplier relates a substantially lower production outlook:

"This year's US dillweed production will be 25 percent less than last year's, down from 2,270 acres harvested to 1,820 acres harvested." The carryover from last year, he says, was down sharply, from 20,000 pounds the year before to 3,600 pounds.

According to a domestic dillweed grower, the European and American products are qualitatively different. "Organoleptically, the two products are not the same. The flavor imparted by the European material is closer to dillseed oil than dillweed oil. But this may not matter to a pickle packer in the long run."

"Relative carvone levels are also an issue. One trade source stresses the West Coast prices include a guarantee of minimum 37 percent carvone, 'straight natural dill,' while some incidence of cut dill has occurred on the street." He also notes that "the European dillweed oil runs generally higher in carvone levels than the US oil."

The urgency with which the imported dillweed oil has been offered to US buyers has led to speculation on the upcoming European crop. Late price quotes on remaining 1985 Hungarian oil have been as high as \$17 per kilo, says one buyer.

"It's difficult to tell if they're short or if they're trying to raise the price for future purposes," he says. Another trade source con-

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# CHEMICALS SHIPPING '86 RAIL AND TRUCK



expects Dow's use of trucking to expand to between 40 and 45 percent of its total inland volume.

E.I. du Pont de Nemours & Co., a company that is expanding its specialty business but maintaining a large stake in commodity materials, says its trucking volume is up by a total of 10 percent in the last five years, while its rail volume is down by about 7 percent. Also as a result of deregulation and better trucking rates and services, the company has largely spun off its in-house trucking fleet since 1981.

This company feels, however, that there

are areas where rail could see strong growth. "Intermodal methods," says Clifford Sayre, director of logistics for DuPont, "have not realized their full potential." Speaking specifically about inland shipment, Mr. Sayre points out that cooperation between rail and truck could be better.

"Since the late '70's, rail didn't want to give anything away to trucking and vice-versa," he explains. While ocean-going shipments have gone around the problem with bills of lading and ocean-going containers, domestic traffic is lagging. "Intermodalism is starting to realize its potential in the interna-

tional market place," explains Mr. Sayre, "but it has come up short on the inland routes."

Mr. Sayre also sees greater use of backhaul routes as a possible money saver for railroads and a step towards lower overall shipping costs.

For instance, his company's acetonitrile unit in Memphis exports products to the far East, while a Nissan plant close by imports material from Japan. He sees this as a great opportunity to backhaul his material to the Pacific.

However, Mr. Sayre laments that antitrust laws don't allow DuPont to talk to Nissan on a move that might lower their shipping costs. "It's up to the transportation company to fill their backhaul routes," he concludes.

FMC, another company with diversity in specialty and commodity chemicals, is bucking the trend away from rail with expansion of its piggyback fleet. In total, the company ships 80 to 85 percent of its tonnage by rail. FMC is expanding its piggyback container fleet from a current fleet of 800 to an estimated 2,500 to 3,000 in the next two years.

## BOXCARS BECOMING EXTINCT

John Noll, FMC's traffic manager for the industrial chemicals group, says that "boxcars are becoming extinct." Piggyback containers and increased utilization of intermodalism has been given a shot in the arm by deregulation, which he says "has forced both trucking companies and rail lines to look for innovative ways to compete in the marketplace."

American Hoechst also reports strong interest in intermodal and has recently started moving its material it imports from Europe to Atlantic ports on double stack cars. Ten percent of the company's sales, according to Michael Piron, vice-president of corporate chemical transportation, are imports. He estimates that since starting double stack shipments six months ago, about 5 percent of its imported material is moving through double stack.

Other companies say that double stack shipments have not been a real option for them. The method is most appropriate for lighter, dry materials, rather than hydrous, more dense compounds that would pose weight problems in a two-tiered stack.

As innovations emerge in rail and truck, insurance questions arise as handling becomes more complex and dangerous. Ideas such as rail truck transfer where material is pumped directly out of long haul tank cars into short haul trucks to support a hub and spoke distribution system has been largely ignored by chemical companies. Shippers

are looking to reduce their liabilities and have been slow to accept this method.

Hoechst has, however, adopted rail truck transfer to move granular polyethylene from Texas to Indiana. The material starts on 190,000-pound capacity rail cars and is drawn out in truckload quantities by agents in the Midwest.

While rising insurance rates have been a broad based industry problem, chemical shippers have seen minimal impact so far. Transport companies, particularly truckers, however, have had to bear a large burden of higher rates, according to Mr. Campbell of Data Resources, "truckers have been battered by the insurance problem."

However, he notes that "railroad performance on accident, loss and damage has been exceptional." If it were not for this, railroads would have seen much higher insurance rates and be poised for an even greater loss of market share than is already predicted.

What has been most difficult for truckers is their inability to pass increased costs along to customers. "To some extent they (truckers) pass higher cost along but in most cases they eat them," according to Mr. Campbell. Extreme competition and overcapacity among truckers has made price increases very difficult.

Truckers have made some gains in cost improvements this year, however, as diesel fuel prices have fallen considerably.

Railroads, carrying about half the percentage of fuel cost of truckers, have not benefited as strongly from lower diesel prices.

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DOW Chemical Company expects the use of trucking to grow from 40 percent to 45 percent of its total chemical volume. Trucks are more susceptible to weather damage, the company explains.

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# CHEMICALS SHIPPING '86

## WASHINGTON

### Truck Safety Laws Draw Fire on the Hill

By GLENN HESS

While the number of train accidents involving hazardous chemicals has declined sharply since safety features were added to tank cars in the late 1970's, some members of Congress say they are concerned that similar progress is not being made on the nation's highways.

"Truck safety laws in this country are a sham," declares Rep. Timothy E. Wirth (D-Colo.), chairman of a House subcommittee on telecommunications, consumer protection and finance.

"Lives are being threatened by weak, confusing laws which are supposed to be governing the shipment of hazardous cargo," he says. "We need stronger, more effective legislation to guard against senseless, preventable accidents."

Rep. Wirth has introduced sweeping legislation to overhaul the Hazardous Materials Transportation Act, which expires on September 30. But with time running out in the current legislative session, Congress is expected to reauthorize the existing statute for another year and then consider substantive changes in 1987.

Rep. Wirth, along with Reps. Cardiss Collins (D-Ill.) and James J. Florio (D-N.J.), released a study earlier this year which blamed human error for about two-thirds of transportation accidents involving haz-

ardous substances, such as toxic chemicals and radioactive materials.

Some of the more frequent errors involved loose fittings and valves, improper loading of trucks, and placing heavy freight on top of lighter materials — all of which could be avoided by proper worker training.

A study by the Congressional Research Service of the Library of Congress says Department of Transportation's general training regulations for transportation workers handling hazardous cargoes "can, at best, be considered to be vague."

"They do not specify the nature, content, objectives or length of required instruction, its desired frequency or whether new employees should be trained," the study says.

"DOT's regulations do not require a certification or a testing program designed to ensure that these workers have a basic understanding of, and sensitivity toward, the hazardous properties of and risks associated with the chemicals with which they are dealing," according to the study.

Most drivers transporting hazardous cargoes have to take, but not necessarily pass, a 66-question open-book examination.

"DOT's examination does not test whether someone is trained in, or has a basic understanding of, emergency response procedures appropriate to the job and responsibilities of being a driver of a truck transporting hazardous materials," the study says.

It cites a request by Clifford Harvison, president of the National Tank Truck Carri-

ers Inc., to require newly hired hazardous transportation workers to achieve a passing grade on a written exam.

A subsequent study by the Office of Technology Assessment found that many incidents involving hazardous substances are not reported to Federal accident and spill record-keeping systems, and that damages average more than \$160 million per year, at least ten times higher than the annual amount reported to Congress by DOT.

The report cites inconsistencies in state and local regulations, which often are confusing and burdensome for industry and enforcement officials.

Data and information about shipments are so poor and difficult to acquire that state and local regulations are often developed with little or no understanding of the magnitude or nature of the problems to be controlled," the report observes.

The study also notes that despite the widespread risk of accidents involving hazardous materials, up to three-quarters of the nation's 1.5 million firefighters, police and emergency medical personnel lack proper response training.

The Wirth bill, which is opposed by the Reagan Administration, would centralize administration of several Federal laws relevant to hazardous materials transportation that are currently carried out by several agencies within DOT.

The legislation would authorize increased funding for Federal and state safety inspections and audits, and require drivers hauling hazardous cargoes to have proper training and to maintain a safe driving record.

#### EMERGENCY RESPONSE

Grants would be authorized for emergency response training for firefighters and local police, who often arrive first at the scene of an accident. The bill would also authorize grants to states and localities for designating routes for safe transport of hazardous materials, and require DOT to issue guidance.

Philip W. Haseltine, deputy assistant secretary of DOT, says the Reagan Administration agrees with the underlying objectives of the Wirth bill, but maintains it is unnecessary because the department is moving to correct the problems the legislation addresses.

Mr. Haseltine acknowledges there are "serious weaknesses" in driver training programs but says they will be corrected by proposed regulations that would require states to follow minimum Federal standards for trucking licenses.

The proposed regulations would prohibit tank-truck drivers from holding multiple licenses and require them to pass road tests in the type of vehicle they operate for a company.

"Despite the importance of training as a means of reducing the frequency of human error — and thereby dramatically reducing the number of accidents — DOT's regulations are vague, lack consistency and provide little direction to industry, the states or the localities," says the New Jersey Democrat.

Without improved training for those who transport the materials, he adds, "we are simply waiting for disastrous accidents to occur."



Rep. Timothy Wirth

But Paul Rothberg, an author of the Congressional Research Service study, says the regulations proposed in May by DOT fall short of the requirements contained in the Wirth bill.

Mr. Rothberg says the department's proposal would not cover all drivers of hazardous loads or all workers handling the estimated 180 million shipments of hazardous materials in this country every year.

The proposals also would not require drivers to pass a written examination or revise the current DOT exam to ensure that drivers are tested on emergency procedures to be used following an accident, Mr. Rothberg says.

Rep. Wirth says he welcomes DOT's initiatives, but also expresses skepticism. "Fifteen years of rulemaking still has not yielded driver qualifications stringent enough to protect the public," he says. "Without legislation requiring increased qualifications, I fear that DOT's latest effort is but another episode of promises, promises."

Rep. Florio, chairman of a House subcommittee on transportation, also believes that legislation is necessary to help curb accidents and minimize damage.

"Despite the importance of training as a means of reducing the frequency of human error — and thereby dramatically reducing the number of accidents — DOT's regulations are vague, lack consistency and provide little direction to industry, the states or the localities," says the New Jersey Democrat.

Without improved training for those who transport the materials, he adds, "we are simply waiting for disastrous accidents to occur."

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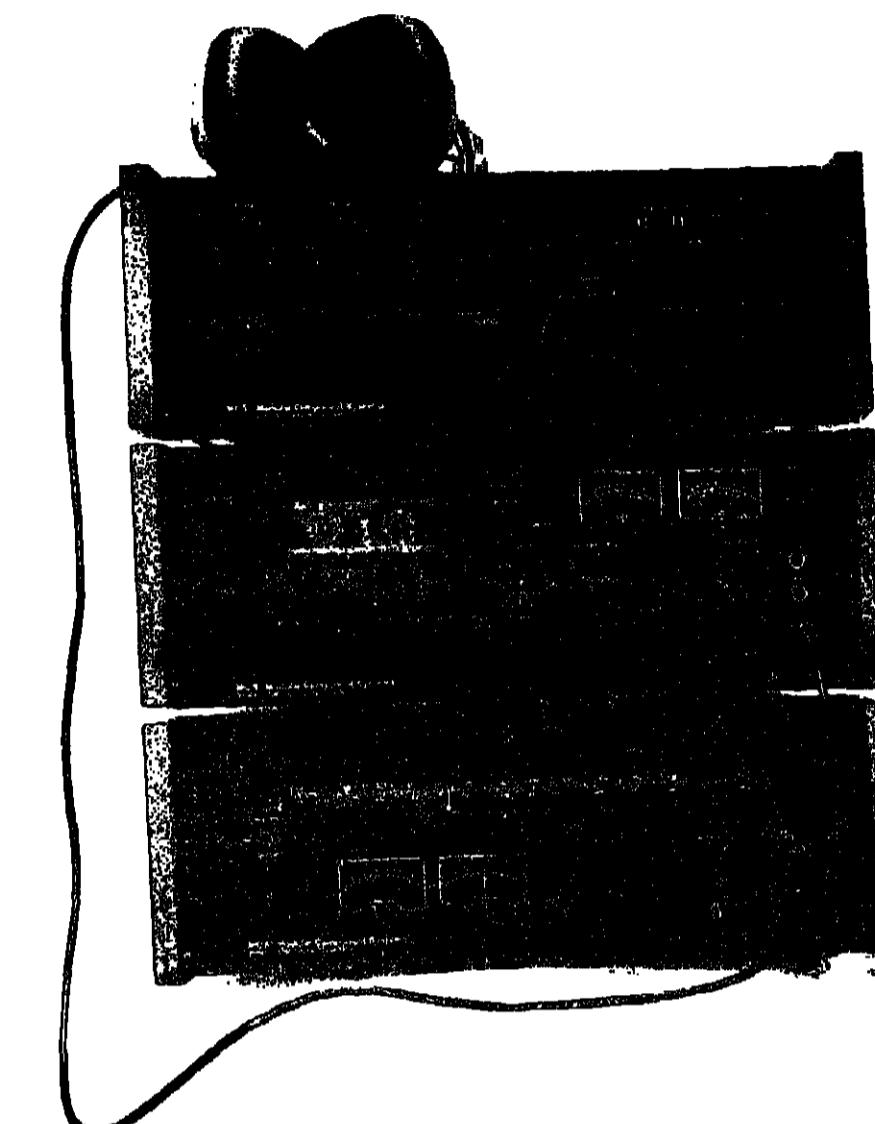
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TRUCK SAFETY: Lawmakers in Congress complain that not enough progress is being made to improve the safety of truck transport of hazardous chemicals. Current laws are called inadequate by congressional critics.



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CHEMICAL MARKETING REPORTER

# CHEMICALS SHIPPING '86 INTERNATIONAL



## Pollution Regulations Anger Shippers O'seas

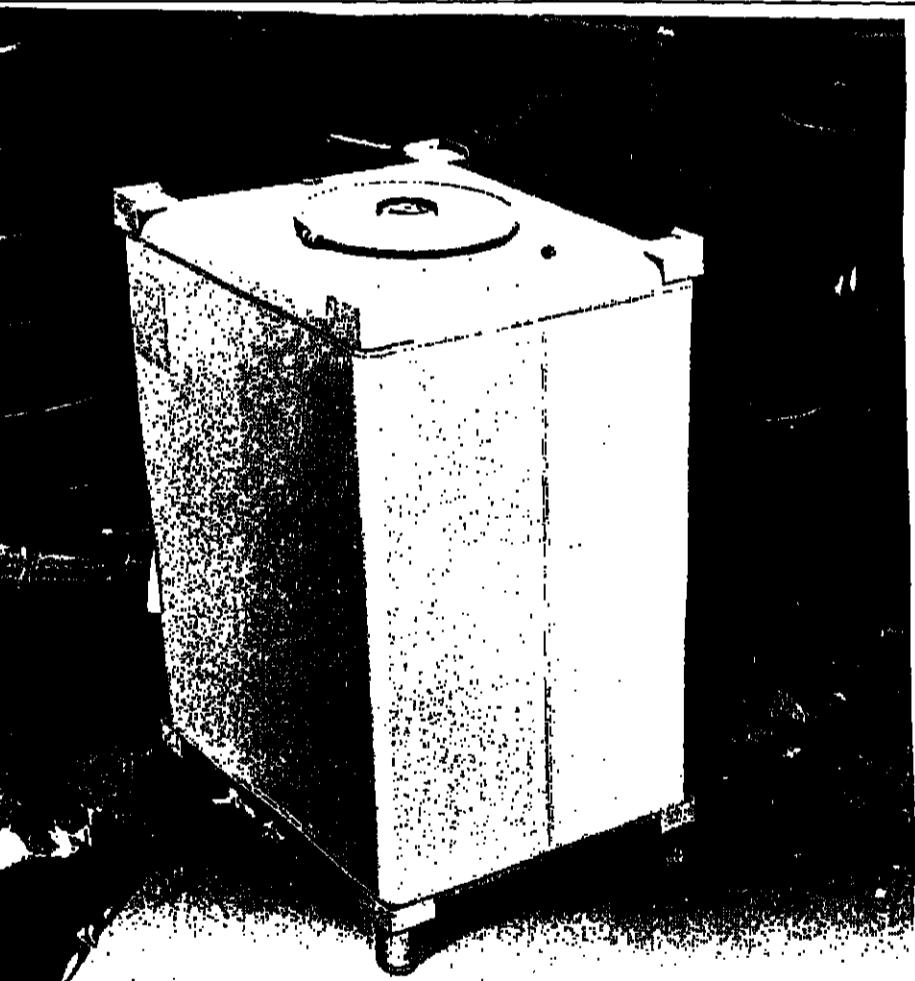
By SEAN MILMO

European chemical shipping companies, already deeply frustrated by several years of depressed cargo rates caused by overcapacity, are getting angry about the implementation of anti-pollution regulations due to come into force next April.

Ship owners have invested millions of dollars to ensure that their vessels comply with the new International Maritime Organization (IMO) rules, whose main objective is to reduce the disposal of toxic waste by ships at sea to a minimum.

But as the April 6 deadline — already put back once — draws near, the owners are finding that most governments and port authorities are doing little or nothing themselves to provide shore facilities for the reception and disposal of waste from ships.

"We are deeply unhappy — to say the least," says Trygve Meyer, an official at the Oslo-based International Association of Independent Tanker Owners (Intertanko). "Ships' masters will be under tremendous pressure. They risk losing their licenses if they do not comply with these regulations, yet no one seems to want to help them."



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34 CHEMICAL MARKETING REPORTER

Brian Rye, transportation officer at the UK Chemical Industries Association (CIA). "Since the ship generates the slops it must be considered to own them."

The owners, on the other hand, think otherwise. "It is the cargo which is the danger and thus ultimately causes the waste," retorts Mr. Meyer. "So the onus should fall on the charterer."

The ship owners associations have drawn up a model contract for their members which puts legal and financial responsibility for the disposal of cargo residuals on charterers.

The Bermuda-based Gotaas-Larsen shipping company is already negotiating new contracts with its customers which takes into account MARPOL Annex II. "If there are slops to be disposed of it is for the charterer to make the necessary arrangements," said Danny Sharp, chartering manager at the company's London headquarters.

The regulations — called MARPOL Annex II — stipulate certain stripping requirements, depending on the toxicity of the product (categorized from A to D), and a mandatory prewash of cargo tanks for the most dangerous chemicals and those with high viscosity or solidifying substances.

Most of the prewash residues must be transferred ashore for disposal but MARPOL does not specify who should be responsible for this task.

The chemical manufacturers, supported by the storage companies, believe that it is up to the ship owners to ensure that arrangements are made for getting rid of the waste.

"The slops are created by the ship," argues

will now have to become an additional cost for the whole industry, on the principle that those who cause pollution will have to pay to remedy it."

The ship owners are warning that the extra costs could be considerable if most ports are not properly prepared by next April.

"There could be a tremendous impact on costs if we have to keep slops on board until we reach a port able to receive waste," says Jan Bouwers, managing director of Gebr. Broere shipping company in the Netherlands. "Rates will be pushed up and up because there will be a diminishing amount of room on ships for cargo."

There is particular concern about ports in developing countries, most of which are unlikely to have reception facilities for waste, let alone the means for disposing of it.

Annex I of MARPOL, which contains IMO's anti-pollution rules on oil waste from tankers and which came into effect three years ago, has caused few problems because the oil has been easily recycled. Oil and waste

"That is tantamount to saying that a warehouseman owns what he is storing," says Harrison Call, executive secretary of the UK Independent Tank Storage Association.

#### GOVERNMENT RESPONSIBILITY

The IMO — a United Nations agency — has meanwhile put the responsibility firmly on the shoulders of governments.

"The convention makes it clear that governments are required to ensure that facilities are provided," says IMO's information officer, Roger Kohn, at its headquarters in London. "They cannot wash their hands of whole thing."

The absence of agreement on the matter will probably mean that by next April only two ports in Europe — Rotterdam and Hamburg — will have waste disposal facilities available. Even then they will not be fully operative.

Rotterdam, Europe's biggest chemical port, which has been doing the most to get ready for the deadline, is at present only sure that it will be able to deal with three quarters of waste brought ashore.

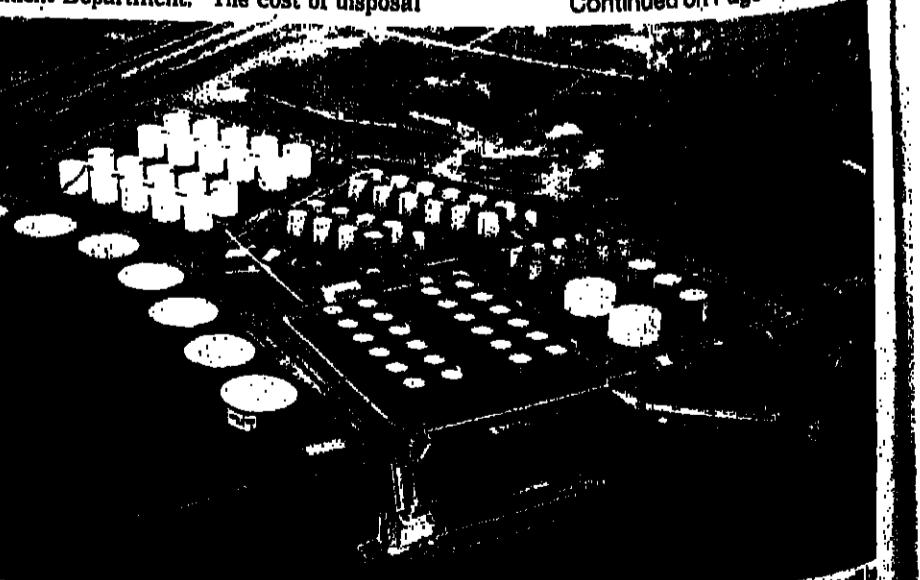
But like Hamburg, it is fortunate to be assisted by a government subsidy towards the capital cost of setting up reception and treatment installations.

Many European governments are refusing to provide any financial help, placing much of the burden on ports which are already hard pressed for cash.

The UK government, for example, is sticking resolutely to a "polluter pays" policy, effectively leaving the question of finance to be thrashed out by the ports, storage terminals, ships' owners and chemical manufacturers.

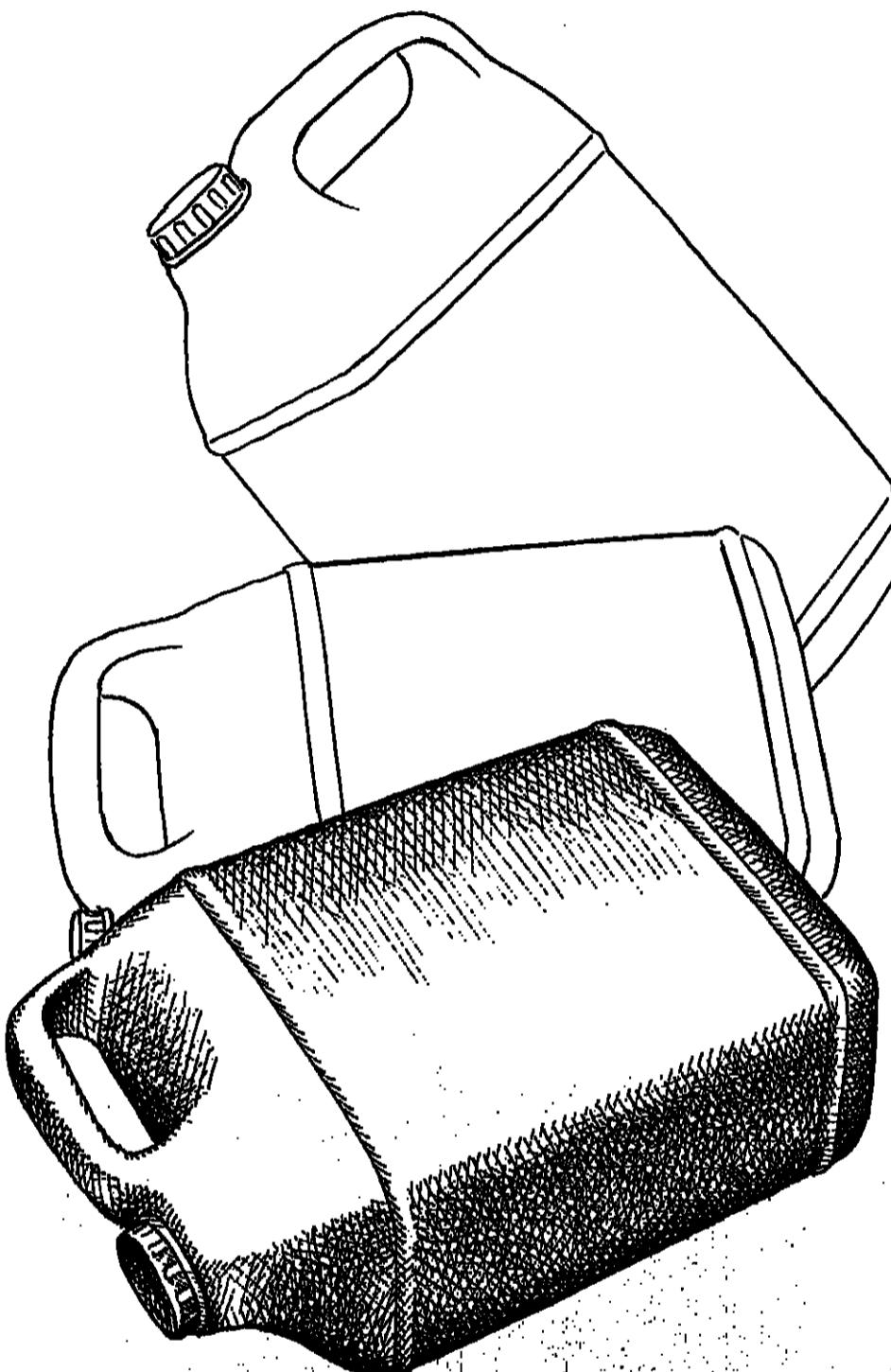
"The chemical carriers have been lucky up till now to be able to clean their tanks for free — but at the expense of the environment," says an official at the UK government's Environment Department. "The cost of disposal

Continued on Page 43



**ROTTERDAM TERMINAL:** Rotterdam Port Authority questions whether commercial companies will be able to cope with waste problems without the financial assistance of government. Its waste disposal facility is being funded through a \$7 million government grant.

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SEPTEMBER 1986

CHEMICAL MARKETING REPORTER

35



# CHEMICALS SHIPPING '86

## SMALL LOTS

### Small-Lot Shipments: Safety Comes First

By STEPHEN KEARNEY

Since many chemical buyers have needs that do not require full truckload shipments, suppliers frequently turn to less-than-truckload shipment (LTL) services offered by common carriers.

When selecting a carrier, a Mobay Chemi-

cal Corporation spokesman comments, "the first criterion is safety, the second is service, and the third is cost." Reichhold Chemicals, Inc. says that it is important to regularly monitor the performance of carriers in order to ensure that reliable service is maintained.

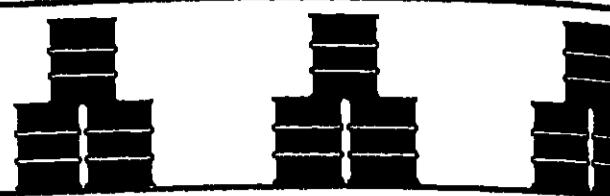
Common carriers are frequently relied upon for the hauling of LTL's. In analyzing the merits of a carrier for LTL delivery,

considerations involve whether the carrier has sufficient insurance coverage and an acceptable loss to damage ratio.

With the emphasis on safety, shippers say that both they and their carriers are very familiar with guidelines established by Occupational Safety & Health Administration, Environmental Protection Agency and Chemical Transportation Emergency Center (Chemtree).

Department of Transportation mixing and loading rules need to be observed in order to ensure safe transportation of hazardous chemicals. This is seen as quite important in arrangements where LTL shipments are combined.

Shippers say they often aim to consolidate



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# CHEMICALS SHIPPING '86

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Shippers say they often aim to consolidate

their loadings by putting more than one LTL onto a truck in order to create a full truckload. Stepan Company says that it is possible to save up to 50 percent of the cost of shipping by consolidation.

Pooling arrangements, in which a central warehouse acts as a distribution center where LTL shipments may transfer from one truck to another are seen as useful in cases where expedited delivery is not essential. However, Mobay's distribution manager observes that pooling is less prevalent at the present time than it was during the energy crisis years.

Varying discounting levels are cited by producers for LTL shipments. One specialty chemical supplier says that a 20 percent discount rate is normal for good service, and that higher discount rates are offered, but "don't provide the service."

However, a flavor and aroma chemicals supplier says that a discount rate of 30 to 35 percent can be obtained "very commonly." A large resin-based chemicals producer comments that the discount level "depends on how much leverage you can exert" through frequency and quantity of business.

It is argued that deregulation of the trucking industry has created a more competitive environment that has resulted in more sizeable discounts and provided producers with an incentive to use the common carrier rather than in-house fleets for LTL deliveries.

While many agree with this, a distribution manager for Bio-Rad Laboratories says that "deregulation has had its pluses and also its disadvantages." Among the latter is the difficulty of some small carriers in staying in business. With price-cutting wars, he says, the end result could tend to fewer companies and less competition.

Chemical suppliers say that the trucking industry has made progress in its ability to keep track of shipments. "The coding system in the industry has been updated," says Chem-Fleur Inc.'s shipping manager, with the procedure involving the assignment of a computerized number to each LTL.

"If something is lost, that number is given to the trucking company, they create a claim number and find out whether the shipment was delivered and signed for," he says. A predesignated release value is used in determining compensation for lost amounts.

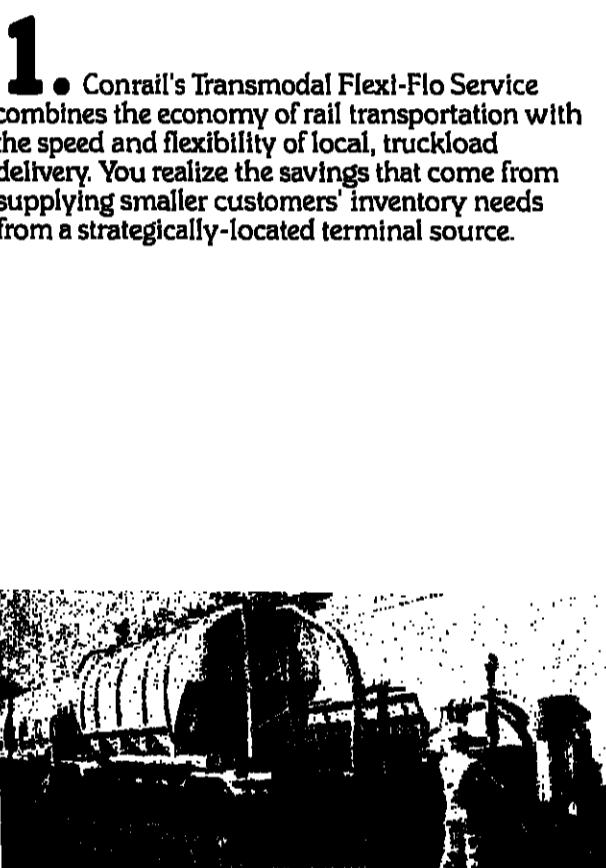
Reichhold says it operates "on the exception rule — if it isn't going to be there on time, we expect them to let us know."

According to Mobay, modern technology has resulted in the use of electronic data interchange, whereby the chemical company's computer can communicate with the carrier's computer for tracing and expediting freight bills.

Producers observe that relationships with distributors are often advantageous for the handling of LTL shipments. Some companies focus on using distributors for LTL's and handle larger orders themselves. A distributor "has his own brand of customer" who may be

*Continued on Page 42*

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## COATINGS & PLASTICS

mostly in response to depressed phenol prices and foreign competition. There has been no real change in prices since then.

Although major phenol producers announced a 2c. per pound increase to be effective by the third quarter, it did not hold.

Although selling prices are hard to pin down, considering the variety of grades within each category, one source says that high-volume selling prices for commodity liquid phenolic resins are currently in the low 80c. per pound range.

Semi-solid types (80 percent solid content) sell for 30c. per pound; specialty pulverized solid grades are selling in the 70c. to 80c. per pound range.

While demand for phenolic resins was up almost 7 percent in the first half of this year to 1.4 billion pounds, producers expect a falloff in the second half. For the year as a whole, demand is expected to be the same, or

slightly below, last year's level of 2.6 billion pounds.

Capacity utilization is estimated to be around 75 percent of total nameplate. In June, Reichhold Chemicals sold its phenolic resins division to BTI Specialty Resins, a division of BTI Industries, formerly Bakelite Ltd. of Canada; the firm is not planning any changes at this time although a rationalization study is underway. Georgia-Pacific plans to expand its Beaver Creek facility by the end of the year.

**POLYESTER RESINS** — Reichhold Chemicals Inc., a major producer of unsaturated polyester resins, will be hiking selling prices for its lines of the resins, effective October 1.

Selling prices for general purpose unsaturated polyester resins will be increased 2c. per pound for all shipments on and after October 1.

Specialty resin grade prices will be raised in varying amounts, depending on grade and volume of purchase.

Prices for polyester resins, following

lower demand, fell 5 percent over the course of 1986. Driven by low crude oil values, lower demand and overcapacity they fell an additional 7 percent by the end of April, 1986 (CMR, 4/28/86, pg. 23). By the end of the second quarter, they were a total of 10 to 12 percent lower than they had been in second quarter 1985 (CMR 6/25/86, pg. 29).

Customer demands for pass-throughs of lower crude oil costs had been a primary motivating factor, despite the fact that costs for several key ingredients dependent on natural gas, rather than crude values had remained stable.

Producers hope that this same customer psychology may now work in their favor, as styrene monomer price hikes and higher glycol costs may lead to a more receptive environment for a price increase.

One producer reports that styrene monomer supplies have been very tight lately, as scheduled turnabouts and operational problems have developed for some plants, further contributing to the need to raise polyester prices.

By mid-August, selling prices were said to

have firmed somewhat (CMR 8/24/86, pg. 30).

**POLYETHYLENE** — Dow Chemical Company will be raising list prices for "Dowlex" lines of specialty extruded polyethylene for the first time in the few years since these products were introduced.

The company is increasing prices for less-than-truckload quantities, effective October 1.

Volumes of 25,000, 10,000 and 1,000 pounds of "Dowlex 3010" will sell for 50c, 60c, and 65c. per pound, respectively. Prices for similar volumes of "Dowlex 3030" will be 62c. per pound, 64c. per pound, and 68c. per pound, respectively.

**PRIME PIGMENTS**

**ANTIMONY OXIDE** — Effective September 12, Asarco Inc. lowered list prices for its antimony oxide products by 5c. per pound. New prices for its high and ultra-high fine, low tint, and ultra-pure grades are \$1.35 per pound, \$1.40 per pound, and \$1.50 per pound, respectively.

Other domestic producers feel that this move is unrelated to overall market conditions, and speculate that it must be due to excess inventory. This is the third time Asarco has changed antimony oxide prices this year.

**TITANIUM OXIDE** — Kemira Oy, Inc. will be raising list prices for its lines of rutile and anatase titanium oxide, effective October 1.

This follows price increase announcements by virtually all domestic producers and distributors of the pigment. earlier, SCM and DuPont announced increases (CMR 9/1/86, pg. 33). They were followed by Holta-Chem and Kerr-McGee Inc. (CMR 9/8/86, pg. 35). National Lead Industries initiated this move to increase prices in the second quarter of this year (CMR 6/21/86 pg. 29).

Kemira's rutile grades have been hiked 3c. per pound, and will now sell for 81c. per pound. Its water-dispersible anatase grades have been increased 5c. per pound to 78c. per pound, and its treated anatase grades by 4c. per pound, to 84c. per pound.

Although the company continues to import material from its parent company in Finland, its Savannah, Ga., plant, acquired from American Cyanamid, is said to be running at full capacity. Operational expansions are planned, but are still in the proposal phase. Like all producers involved in this market, the firm is said to be running at close to full capacity both here and abroad to keep up with demand.

**ZINC OXIDE** — St. Joe Minerals Company and Pacific Smelting Company have both followed New Jersey Zinc Company's move to increase zinc oxide prices, effective October 1.

On September 11, St. Joe Minerals announced its plans to raise list prices for its zinc oxide products by 3c. per pound. New prices for its French process grades 500 and 900 will be 52c. per pound and 53½c. per pound, respectively.

Last Tuesday, Pacific Smelting said it will be hiking prices for its activated and French-process grade products by 5c. per pound. Its activated grade will now sell for 64c. per pound, its French-process grade for 55½c. per pound.

These firms explain that recent dramatic increases in zinc metal prices provided the major impetus for the price change. Where, in the first quarter of this year, they ranged near 30c. per pound, they steadily increased, shooting up dramatically within the past two months to 47c. per pound.

Demand for zinc oxide is expected to equal last year's figure, but not surpass it. Last year was a good year for this mature market.

### MISCELLANEOUS

**SILICA PRODUCTS** — Following Dr. Pont's move, PQ Corporation will be raising list and selling prices for its "Nyacol" line of colloidal silicas.

Effective October 6, the list price for "Nyacol 9950," a paper fractionating agent, will be increased 8.5 percent to 84.9c. per pound bulk and 79.2c. per pound truckload.

Prices for the company's other Nyacol lines, will be raised 7 percent, effective the same date.

New list prices for bulk and truckload quantities of its investment prediction coating "Nyacol 830" will be 84c. per pound and 88c. per pound, respectively.

A significant addition to the capacity picture, however, is on the horizon. After years

## HEAVY & AG CHEMICALS

### Aluminum Chloride Makers See Gradual Market Turnaround

North American anhydrous aluminum chloride producers are optimistic that the industry is turning around after years of shrinking demand and soft pricing, although there could be more trouble down the road.

Demand for aluminum chloride was either flat or down during most of the early 1980's. The demand slide, producers say, came primarily because many makers of ethylene oxide, the styrene precursor, moved away from aluminum chloride-catalyzed production. Similarly, some chloride process titanium dioxide capacity has switched to non-aluminum chloride based processing.

Demand shrinkage has had its impact on the market's players. In early 1984, Vanchlor Company bought ACL Industries of Elkhorn, Md., and moved the equipment to its Lockport, N.Y., location. Much of the capacity was closed permanently, according to Vanchlor.

Similarly, in early 1985, Welland Chemical in Sarnia, Ontario, bought DAL Specialties, Rensselaer, N.Y., and shut down that facility. The market now stands at three commercially active players, with Argus Division of Wilco Corporation being the third and largest producer, at LaPorte, Tex., and Phillipsburg, N.J.

With the size of the business now pared down, producers say that demand is looking up. The most optimistic marketer feels 1986 growth will be between 2 and 3 percent; another considers this year to be about even with 1985 but sees new applications on the horizon.

Any increased demand is linked mostly to growth in the titanium dioxide and styrene industries. Government figures show that US titanium dioxide production through June 1986 is up over 12 percent, compared to the same period last year. Styrene production is also up, by almost 2 percent.

**HIGH OPERATING RATES** — Moreover, at least one aluminum chloride marketer feels high operating rates for both these products will ensure that no additional production changes precluding aluminum chloride use will take place for another year or two.

Also cited as significant but smaller volume growth areas are catalytic uses in the pharmaceutical and specialty chemical markets.

Pricing, producers say, is the main sticking point today, with the business "running on very thin margins" according to one.

The April 1 price increase of 3.5 cents per pound is generally regarded to have succeeded. The hike, however, was not much more than a raw material price passing on, producers claim.

Two world producers are also present in the US market to a lesser degree. Pigmentex Oxides makes aluminum chloride in Monterrey, Mexico, Southern Texas Chemical, which markets the product here, says it is imported in limited amounts.

Also, Fluka Chemical Corporation imports a low-iron reagent grade aluminum chloride from its parent company in Switzerland. The material is used in research and development applications, mainly in Friedel-Crafts reactions, and also in the production of sophisticated battery systems, according to the company. Argus Division of Wilco Corporation also makes a reagent grade.

**ALUMINUM SULFATE** — Essex Industrial Chemicals notes that it has sent customers' letters announcing the removal of a TVA on the price of dry, standard-ground aluminum sulfate. The new prices, effective immediately or as contracts allow, are \$205 per ton to distributors and \$220 per ton to direct consumers, both f.o.b. distribution point.

Essex John General Chemical and Staffor Chemical (CMR, 8/8/86, pg. 31) in announcing dry alum price changes. The new price had recently been lowered to \$185 per ton (CMR, 4/28/86, pg. 29) in response to the

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MAGOX® Sugar Grade MAGOX® 98 MAGOX® Slurry	Sugar Refining	Neutralization of raw cane and beet sugar juices reduces evaporator scaling.
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## HEAVY CHEMICALS

threat of import material from the Caribbean.

CAUSTIC SODA — Holtrachem Inc., a major distributor of caustic soda, has announced an increase in the price of its caustic soda solution, effective immediately and as contracts permit, on a case-by-case basis.

The reason for the increase, Holtrachem notes that caustic soda producers have increased prices and that a significant amount of chloralkali has been recently rationalized by Dow Chemical at Freeport, Tex., and DuPont at Corpus Christi, Tex. The company also points out that Occidental Chemical's recent acquisition of Diamond Shamrock's chloralkali business has eliminated one player from the marketplace.

Holtrachem feels that producer invento-

ries of caustic soda are in better balance than they were earlier in the year. Inventory pressure should not be a problem in the near future, the company believes, because the construction industry has peaked for the year, and chlorine demand should decline as new building starts off. Slowdown in the decline of interest rates should also dampen new construction, the company says.

According to Holtrachem, now that prices are no longer declining, and may even be bumping upward, inflation should be picking up, resulting in the usual slowdown in business that affects chlorine before each new construction, the company says.

SULFUR DIOXIDE — Essex Industrial Chemicals says it has sent letters to customers notifying them of a \$10 per ton increase in the price of sulfur dioxide. The new price is \$230 per ton, f.o.b. plant, and is effective immediately, or as contracts permit. Essex joins most other major marketers raising sulfur dioxide prices.

ZINC — Falconbridge Ltd. said last week that effective immediately, for sales outside North America, the base selling price for "Kidd Creek" brand zinc metal has been increased to \$920 (US) per ton from \$880 (US) per metric ton. Falconbridge produces zinc at its Timmins, Ontario, metallurgical site.

An essential oils dealer concurs on the low price, but disagrees that synthetics may absorb the market: "There is a lot of petitgrain oil around, plenty in stock here in the US and

available in South America at low prices. We don't need to reconstitute it."

Until now, therefore, trade sources agree that Paraguay's policy of restricting the size of the harvest, despite their plenitude of petitgrain trees, in order to retain petitgrain's place in the market has met with success.

## SEEDS & SPICES

CUMIN SEED — Indian and Iranian cumin seed, following an August firming trend, have leaped from 83¢ and 73¢ per pound respectively, to \$1.05 per pound in the last week.

Turkish cumin seed gained 34¢, to 98¢ per pound during the same period. The price advances have been attributed to a limited Turkish crop and increasingly scarce supplies elsewhere. Chinese cumin seed has followed suit, joining the Indian and Iranian level of \$1.05 per pound.

OREGANO — Mexican oregano prices are not advancing as originally expected, according to a spice broker. With the shortage of Greek and Turkish in mind, Mexican producers were thought to double their prices from \$1.05 to \$2.10 per pound next week.

Yet a lack of confirmation of the European crop's being contaminated has led Mexican suppliers to scale down their pricing outlook. "We will sell our oregano in the \$1.40 to \$1.50 per pound range," says a Mexican grower.

Beating the expected influx of Greek and Turkish material now seems to be the first concern: "We need to choose which plants, clean them, and have them in the market as soon as possible, in three weeks," he says.

POPPY SEED — Dutch Poppy advanced to 59¢ per pound last week, a gain of over 80 percent since June's quote of 36¢ per pound. The Netherlands growers reduced their August/September crop in a successful bid to strengthen prices. Turkish and Australian poppy prices have benefited as well, firming steadily with the Dutch to 52¢ and 53¢ per pound respectively.

## House Unit Okays

Continued from Page 5

cost of Conrail's \$3.2 billion in revenues. Chemicals account for a similar percentage of NS's total revenues.

The proposed sale of the freight railroad is expected to be incorporated into comprehensive budget reconciliation legislation which must be passed before Congress adjourns for the November elections.

Before approving the bill, the committee eliminated several rate-regulation provisions that had been added to the legislation a day earlier by the commerce, transportation and tourism subcommittee.

After the subcommittee's vote, Transportation Secretary Elizabeth Dole urged energy and commerce chairman John Dingell, (D-Mich.) not to use the Conrail bill as a vehicle to modify the 1980 Staggers Act which deregulated the railroad industry.

Such provisions, she warned, might draw a White House veto, even though the Reagan Administration wants to put Conrail into private hands.

Mrs. Dole said the less-regulated environment created by the Staggers Act gave Conrail and other railroads necessary pricing and service flexibility to enable them to better compete with the trucking industry.

Advocates of the Staggers changes, led by Rep. Billy Tauzin (D-La.), had argued that Congress should roll back rail decontrol to protect captive shippers who depend largely on a single railroad to haul their commodities.

Captive shippers of fertilizers and dry chemicals have complained that the Interstate Commerce Commission has failed to protect them against unreasonable rate increases since deregulation. Rep. Tauzin's new-fangled provision would have given ICC new powers to protect shippers hurt by such market dominance.

But Reps. James Florio (D-N.J.) and Norman Lent (R-N.Y.) argued that to consider extensive new railroad regulation at this late date in the congressional session could jeopardize the Conrail bill.

"We wanted a clean Conrail bill," said Federal railroad administrator John Riley. "What we got was closer to that than any other available amendment." The FRA is a division of the transportation department.

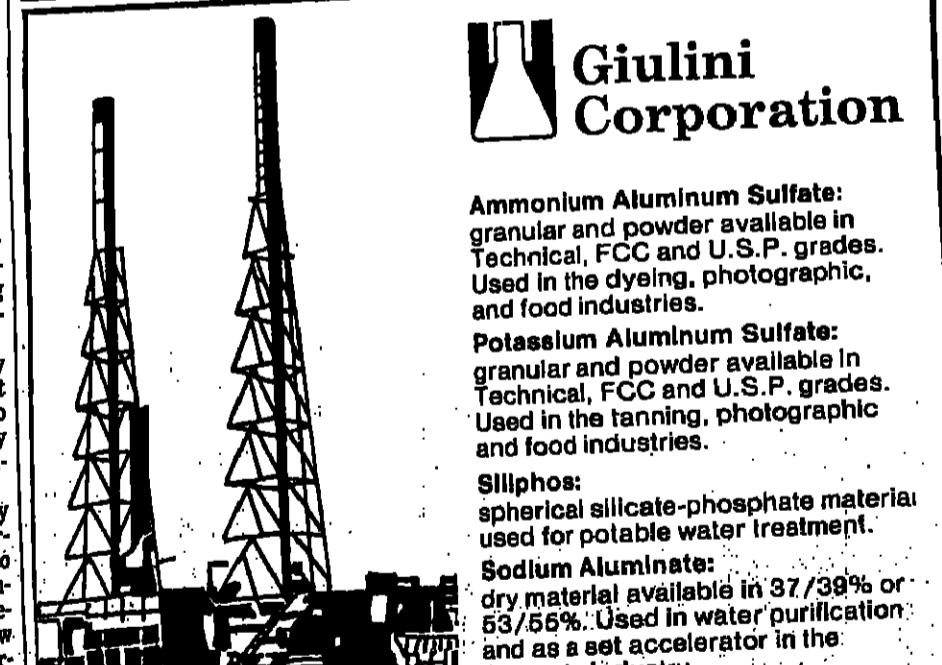
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## Sulfur Rules Give Industry 'Hobson's Choice,' Says CIBO

Environmental Protection Agency is threatening to hand American industry a Hobson's choice between unaffordable boiler emissions controls and limited fuel sources in order to obtain minuscule environmental improvements, a group of industrial boiler owners says.

The Council of Industrial Boiler Owners (CIBO), representing 50 US industrial firms that rely on a variety of fuel sources for their operations, says that proposed limitations on sulfur emissions from small, new, industrial boilers that burn coal or oil are unfair, unrealistic and untenable.

The proposals, known as New Source Performance Standards (NSPS) for industrial boilers, would require 90 percent reductions in sulfur emissions from new equipment even though the agency estimates such equipment will contribute at most only 1.5 percent of total US sulfur emissions, CIBO says. Utility boilers, which account for far more sulfur in the air, are not as tightly regulated, CIBO adds.

### STRINGENT REGULATIONS

William B. Marx, president of CIBO, says, "The only way for us to meet these regulations and still be able to burn coal or oil will be to add extremely costly and unreliable desulfurization scrubbers to new boilers. Scrubbers cost as much as the boiler itself — doubling the cost of even a small unit to perhaps \$4 million — and they cannot hold up to the 98 percent reliability demand of industry."

"Most of American industry will be forced to go off coal and oil altogether as they expand or replace existing boilers," Mr. Marx asserts.

"They will be forced to burn natural gas, even though the ability to obtain it on a long-term, non-interruptible basis is a matter of debate. Furthermore, the 1978 Fuel Use Act prohibits the use of natural gas as a boiler fuel unless an exemption is obtained. Industry needs more — not less — flexibility to obtain the most economic fuel for its boilers."

Ironically, the overly stringent NSPS will encourage industry to extend the lives of existing boilers, which are dirtier and less efficient than new boilers on the market today, Mr. Marx says. "The rule actually will impede improvement in air quality," he says. "EPA clearly has not thought this rule through rationally."

Boilers create steam for industry's process uses, space heating and electricity produc-

tion. They burn not only fossil fuels but also plant-generated wastes and account for about two-thirds of the fuel burned by industry.

The proposal discriminates against industry by requiring it to meet 90 percent sulfur reduction regardless of the fuel's sulfur content, while earlier NSPS allowed utility burning low-sulfur coal to reduce emissions by only 70 percent, CIBO says. Utility boilers are about 30 times as big as industrial units, and hence emit more.

CIBO also comments that utility boilers have economies of scale that industrial units lack, making scrubbers proportionally less costly for them, and that utilities do not need the same reliability industry needs in boilers because utilities have interconnections through which to get emergency power in the event that a boiler scrubber breaks down, as they often do.

CIBO proposes the following NSPS requirements:

- Continuation of the current emissions limit of 1.2 pounds sulfur per million Btu heat input for industrial boilers larger than 250 million Btu.

- A new emissions limit of 1.8 pounds sulfur per million Btu for small boilers (100 million to 250 million Btu).

- No percentage reduction requirement, thereby allowing industry the freedom to choose the most economic fuel sources and most appropriate emission control technologies — including emerging technologies — to meet the emissions caps.

- "This NSPS fails to meet criteria under the Clean Air Act — reaffirmed in court — for EPA to base its regulation on a cost-effective, achievable, reliable and adequately demonstrated control technology," Mr. Marx concludes.

"The petition marks the first time CFTA has requested that the agency approve new uses for permanently listed colors. Previous color additive actions by the trade group focused on defending existing uses for color additives that FDA had provisionally listed pending completion of safety tests.

If CFTA's petitions are granted, cosmetic manufacturers may expand their eye color palette for the first time since 1960. The technical data, which seek to demonstrate that the four color additives are safe for use in eye area products, were developed by CFTA and its members in conjunction with the Certified Color Manufacturers Association and FDA.

"These petitions are the result of a tremendous cooperative effort by the two trade associations, their members and FDA," CFTA president Ed Kavanaugh commented. "By working together these groups accomplished an impressive goal."

"The use of these shades would profoundly affect the US eye cosmetic market," an industry analyst observes. "They would significantly increase the number and quality of colors available in eye area cosmetics."

"Using the new additives, we can develop eye cosmetics that are more vivid, more true and have more depth than any on the American market," the analyst asserts.

The colors are all reported to be used in European eye area products. If the petition is granted, the shades would be available to American consumers as well.

## Distributors' Chemical Sales Due to Grow

Industrial chemical distributor sales in the United States are forecast to grow 5.2 percent a year reaching \$12.6 billion in 1990, up from an estimated \$9.8 billion in 1985, as measured in constant 1985 dollars, according to a study by Charles H. Kline & Co., Fairfield, N.J.

Chemical distributor sales are expected to grow more than 50 percent faster than chemical consumption overall, driven primarily by producers consolidating their sales forces and expanding product authorizations to reduce selling costs and by the fact that producers often realize a greater net back on certain products by selling through distributors.

In addition, distributor sales are expected to grow as customers maintain lean inventories and require shorter delivery times and distributors expand services and products offered to better meet customer needs.

Other factors likely to directly influence the future of chemical distribution in the United States include: distributor consolidation; entrepreneurial producers; imports; liability insurance cost and availability; and rationalization of domestic manufacturing capacity over 1,000 distributors.

Kline reports that over 1,000 industrial chemical distributors operate in the US with the leading five firms accounting for nearly \$2.5 billion or 25 percent of total 1985 industrial chemical distributor sales.

**FUTURE Mergers**

Future mergers and acquisitions, as well as companies exiting the business, will result in fewer but larger firms.

Increasingly, chemical producers use distributors not only as a sales channel but as an integral component of their total marketing effort.

Although chemical distributors have existed for decades, they have increased in importance during the last ten years. In the past, some producers viewed distributors as a necessary evil.

Most producers now view distributors in a positive light — referring to the relationship as a partnership — and consider distributors as a dynamic extension of their sales and marketing group.

The number of distributors used by producers varies greatly. In its report Kline has identified several leading producers currently using 200 or more distributors throughout the US, while a few producers use ten or fewer distributors.

Chemical distributors serve a diverse range of end users in more than 25 industries. According to results from the new survey, paint and coatings is the leading end-use industry served by distributors, accounting for over \$1 billion or 10 percent of total sales by industrial chemical distributors.

More than one-quarter of the total raw materials consumed in the paints and coatings industry is supplied by distributors. Electronics and pharmaceuticals are two end-use industries forecast to exhibit above-

average growth in distributor sales through 1990.

Two primary factors contributing to the higher growth are the faster overall growth of these industries and the increasing focus placed on these industries by distributors, Kline says.

## DOE Steady On Oil Buys

Department of Energy will not accelerate the purchase of crude oil for the Strategic Petroleum Reserve unless prices decline, Secretary John S. Herrington says.

He says that while DOE is soliciting bids from domestic producers, it is continuing to negotiate terms with Mexico, the most recent supplier to the 505-million-barrel reserve in salt domes on the Gulf Coasts of Texas and Louisiana.

Secretary Herrington says he would like to increase the reserve at the rate of 100,000 barrels per day, the practical limit of intake capacity, but "the price may be a little too high to go to that large a purchase."

The current congressionally authorized limit, which took effect September 1, is 35,000 barrels per day. Mexican shipments had been running at 50,000 barrels per day until the end of August.

Crude oil is currently priced around \$16 per barrel compared with about \$28 late last year. Secretary Herrington did not indicate how far the price would have to fall to make him increase purchases.

But he did say, "It did not make sense to me to see oil at \$9 and \$10 per barrel and not be buying 100,000 barrels a day" earlier in the year.

At the Secretary's urging, President Reagan last month reversed his position against additional purchases and told Mr. Herrington he could buy in excess of 35,000 barrels per day if the price was attractive.

President Reagan endorsed the congressional goal of a 750-million-barrel stockpile, a goal set in the late 1970's.

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# **CHEMICAL PRICES**

**WEEK ENDING SEPTEMBER 19, 1986**

This chemical prices section contains spot quotations and/or list prices of suppliers of chemicals and related materials on a New York or other indicated basis. The listings are based on price information obtained from suppliers. Note that posted prices do not necessarily represent levels at which transactions actually may have occurred. They do not represent bid and asked prices, nor a range of prices over the week. Price ranges may represent quotations of different suppliers as well as differences in quantity, quality and location. All matters under this heading are fully covered by copyright.

An index of weekly chemical market reports is on the back cover.

A

A					
Abies sibirica oil, cns.	lb.	15.00	-		
Acetalddehyde, 99%, tanks, f.t. std. lb.	37	-			
Prices 1c higher in West.					
Acetaminophen (see N-Acetyl-p-aminopheno)					
Acetanilide, tech., flaked, bgs., t.i., 1.0.b. works.	1.29	-			
Acetic acid, tech., tanks, dwd. E	lb.	.25	-		
Acetic anhydride, tanks, dwd. E	lb.	43½	-		
Acetic anhydride prices 1c higher in West.					
Acetoacetylure, dms., t.i., dwd.	lb.	1.29	-		
Acetoacet-o-anisidide, dms., t.i., dwd.	lb.	2.70	-		
Acetoacet-o-chloroanilide, dms., t.i., dwd.	lb.	2.85	-		
Acetoacet-o-toluclidine, dms., t.i., dwd.	lb.	1.68	-		
Acetoacetyl-m-xylidide, dms., t.i., dwd.	lb.	3.39	-		
Acetone, tanks, dwd. E	lb.	.25	-		
divd. Zone 2 (Calif.)	lb.	.27	-		
divd. Zone 3 (W. of Rockies excluding Calif.)	lb.	.27	-		
Acetonitrile, tanks, f.t. std.	lb.	.53	.54½		
Acetophenidin (see Phenacetin).					
Acetophenone, tech., tanks, f.o.b. works.	lb.	.78	.85		
perfume grade, extra, cns.	lb.	2.15	-		
N-Acetyl-p-aminophenol, c.i., t.i. works.	kilo	5.95	6.84		
Acetylene black, Imp., 50% compressed, 12½-lb. bgs. c.i., t.i. Int. extra.	lb.	.96	-		
100%, 25-lb. bgs., same basis	lb.	.85½	-		
Acetylene tetrabromide, tanks, f.o.b. works.	lb.	.97	-		
Acetylalicyclic acid, USP (see Aspirin).					
Acetylbutyric citrate, bulk, f.o.b. works.	lb.	1.28	-		
Acetylbutylic citrate, bulk, f.o.b. works.	lb.	2.06	-		
Acrolein, tech., tanks, works.	lb.	.62	-		
Acrylamide, solid, t.i. works.	lb.	1.00	-		
soln., 100% basis tanks, works.	lb.	.74	.77		
Acrylic acid, glacial, reg., tanks, dwd.	lb.	.67	-		
tech., tanks, f.t. std.	lb.	.60	-		
Acrylonitrile, tanks, works.	lb.	.39½	.45½		
Acrylonitrile-butadiene-styrene resin, high-impact, nat. t.i., dms.	lb.	1.09	1.12		
Alumina, activated, gran., 100-lb. bgs., 40,000-lb. min. c.i., works. ton calcined, bulk, same basis	ton	821.00	-		
100-lb. bgs., same basis	ton	354.00	-		
hydrated, white, bulk, same basis	ton	380.00	-		
100-lb. bgs., same basis	ton	190.00	-		
Aluminum acetate, basic, dms., t.c.i., works.	lb.	3.25	-		
Aluminum chloride, anhyd., soln., 500-600 lb. dms., c.i., t.i., works, f.t. equald.	lb.	.53	-		
bulk, same basis	lb.	.48	-		
semi-bulk bins, same basis	lb.	.52	-		
Aluminum chloride, comt., soln., 32° tanks, works	100 lbs.	15.00	-		
ret. dms., c.i., works	100 lbs.	12.00	-		
non-ret. dms., same basis	100 lbs.	20.00	-		
Aluminum formate, dibasic, litq. 6% Al <sub>2</sub> O <sub>3</sub> t.i., works	lb.	.55	-		
Aluminum hydrate (see Alumina, hydrated)					
Aluminum hydroxide, dried, gel, NF.					
75-lb. dms., c.i., t.i., works. lb.	2.75	3.50			
Aluminum metal, 99½% or more, 50-lb. pigs., 30,000-lb. lots, f.t. std.	lb.	.76	-		
Aluminum oxide amorphous (see Alumina, calcined).					
Aluminum paste, leafing grade, std., lining, 2,400 lb. lots, dwd.	lb.	1.40	-		
lining, extra-fine, same basis	lb.	1.99	2.14		
Aluminum phenolsulfonate, purif., 100-kilo dms., t.i.	kilo	6.46	-		
Aluminum powder, leafing grade, std., lining, 2,400 lb. lots, dwd.	lb.	3.17	-		
extra fine, lining, same basis	lb.	4.04	-		
Aluminum stearate, bgs., c.i.	lb.	1.25	1.37		
Aluminum sulfate, comt., grd., 100-lb. bgs., c.i., works, f.t. equald.	ton	205.00	-		
basis 17% Al <sub>2</sub> O <sub>3</sub> East and Gulf Coast	ton	220.80	-		
West Coast	ton	145.00	-		
lb. tanks, N.E. same basis	ton	300.00	-		
iron-free, dry, bgs., c.i. same basis	ton	225.00	265.00		
lb. tanks, same basis	ton		.337		
Aluminum sulfate, USP, gran., dms. lb., f.o.b. works.	ton	2.12	-		
tech., t.i., same basis	lb.	1.88	-		
p-Aminobenzoic acid, 1,000 kilos or more, dms., f.o.b. works.	kilo	9.60	10.10		
2-Amino-4-chlorophenol dry and grd.					
14,000 lbs. or more, f.t. std. lb.	lb.	5.79	-		
Aminoethyl ethanolamine, tanks, f.t. collect.	lb.	1.33½	-		
N-Aminoethyl piperazine, tanks, f.o.b. f.t. collect.	lb.	1.05	-		
2-Amino-2-ethyl-1,3-propanediol					
USP, gran., dms. . . . .	lb.	.40	.55		
Ammonium citrate, dibasic, 250-lb. dms. f.o.b. works.	lb.	2.79	-		
Ammonium dimolybdate, approx. 85%, 24,000 lbs. or more, lb.	lb.	5.48	-		
Ammonium fluoroborate, tech., dms. c.i., t.i., works, f.t. equald. lb.	lb.	1.79	-		
Ammonium heptamolybdate, cryst., dms., 24,000 lbs. f.o.b. works.	lb.	5.57	-		
Ammonium lauryl sulfate, tanks, f.o.b. works.	lb.	.29	.32		
Ammonium lignin, sulfonate, bulk, f.o.b. Hoquiam, Ore. . . . .	ton	72.00	-		
Ammonium nitrate, dom. fertilizer grade, 33.5% N, bulk, S.E. dwd.	ton	130.00	135.00		
Ammonium oxalate, tech., fine, gran. 300-lb. dms., t.i., f.o.b. works.	lb.	1.42	1.68		
Ammonium pentaborate gran. bgs. c.i., works.	lb.	75	-		
Ammonium pentaborate powder 20c. per lb. higher.					
Ammonium persulfate, 225-lb. dms. 24,000 lbs. or more, f.o.b. works.	lb.	.58	-		
55-lb. bgs., same basis	lb.	.56½	-		
Ammonium phosphate (see Di- and monoammonium phosphates)					
Ammonium silicofluoride, dms. c.i., t.i. works.	lb.	3014	-		
Ammonium sulfate, lg. gran., bulk, c.i. works.	ton	80.00	90.00		
std., comt. bulk, f.o.b. works	ton	60.00	70.00		
tech., bgs., c.i., t.i., works	ton	108.00	120.00		
Ammonium sulfide, lg. 40-44% tanks, 100% basis, f.t. equald. ton	460.00				
Ammonium sulfonylcyanate, tech. (see Ammonium thiocyanato)					
Ammonium thiocyanato, tech., cryst. bgs., c.i., works	lb.	1.02	-		
tech. soh., 50%, tanks, f.t. equald.	lb.	.93	-		
Ammonium thiosulfate, photographic, 60%, tanks, f.o.b. works	lb.	.13	-		
Ammonium zirconyl carbonate, soh., bulk.	lb.	.72	-		
Amyl acetate, primary mixed isomers, tanks, dwd.	lb.	.67	-		
Amyl alcohol, primary mixed isomers, tanks, f.t. std.	lb.	.46½	-		
Amyl cinnamic aldehyde, dms.	lb.	2.35	2.60		
p-Ter-Amylphenol, bulk, works.	lb.	.91	1.03		
Amyl oil, dms.	lb.	11.50	12.25		
Anethole, tech., dms.	lb.	10.20	-		
USP, dms.	lb.	3.85	4.60		
Angelica root oil, bolts.	lb.	700.00	-		
Aniline, tanks, f.o.b.	lb.	.33	.36½		
Antimony, f.t. std.	ton	11.75	-		
Baclitracin, U.S.P. non sterile one billion units or more, million units	million units	6.30	6.80		
Bubital, NF. 50 kilohms, dwd.	kilo	22.50	-		
Burthol-sodium, NF. 50-kilo dms. dwd.	kilo	23.00	-		
Bunte, dry-grd., Southern, off-color, coarse, bgs., c.i., f.o.b. works	lb.	.09	.11		
water-grd., white, bgs., c.i., f.o.b. works	lb.	.13	-		
unbleached, extra-fine, pigment grade, c.i., f.o.b. works	ton	160.00	-		
Boron carbide, pure, bulk, c.i. works, f.t. equald.	lb.	.25	-		
photo grain, bgs., same basis ton	510.00				
Borium chloride, 100-lb. dms., 1-10 dm. f.t. works	lb.	1.04	-		
Borium chloride, loch., cryst., bgs., c.i. works	ton	470.00	-		
butyl drum, c.i., same basis ton	590.00				
Borium chlorin, purif., cyst. 400-lb. dms. works.	ton	3.76	-		
Borium monophthalato, 55 lb. bgs., c.i., t.i. f.o.b. works.	ton	46.00	-		
Octahydronaphthalene, cryst., bgs., same basis	ton	33.00	-		
Borium nitrate, 100-lb. bgs., t.i. works.	ton	32.50	-		

# **ABBREVIATIONS**

## THE TERMINOLOGY OF THE CHEMICAL MARKETPLACE

s/alpha	C./Centigrade	E./East	Incl./Included	o-ortho	secs./seconds
alid./allowed	cths./carboys	e.p./end point	indust./industrial	ord./ordinary	sp.g./specific gravity
amorph./amorphous	c.c./cubic centimeters	equid./equalized	kgs./kags	oz./ounce	ship./shipment
AMP/American melting	CD/completely den-	exp./expressed	l-/-sevo	P/phosphorus	solt./solution
point	atured	extr./extracted	lb./pound	p-/para	std./standard
anhyd./anhydrous	c.i./cost insurance	F./Fahrenheit	l.c./less carload	Pac./Pacific	syn./synthetic
AOAC/Association of	freight	f.s./free alongside	l.t./less truckload	pl./proof	tanks/railroad tankcars
Official Agricultural	c.i./carried	ferment./fermentation	lq./liquid	phos./phosphate	tech./technical
Chemists	cns./cans	f.i./free fatty acid	m-/meta	photo./photographic	terti./tertiary
a.p.a./available phos-	com./commercial	f.i.c./free from chlorine	m.a.p./mixed aniline	pkgs./packages	t.l./truckload
phosphoric acid	conc./concentrated	f.i.p.a./free from prus-	point	powd./powdered	ton/reffers to short ton
approx./approximately	cpm./chemically pure	sic acid	mcg./microgram	precip./precipitated	of 2,000 pounds
artif./artificial	cps./centipoises	lb./fiber	mfrs./manufacturers	prod./producer	TVA/temporary volu-
ASTM/American Soci-	cryst./crystalline	f.o.b./free on board	min./minimum	pi./point	try allowance
ety for Testing &	cs./cases	i.p./freezing point	molt./molten	pulv./puverized	t.w./tankwagons
Materials	cins./carbons	frt./freight	m.p./melting point	purif./purified	USP/United States
b/beta	cyls./cylinders	g-/gammas	redist./redistilled	Pharmacopeia	v./viscosity
Be/Benne	d-/dextro	gal./gallon	refd./refined	V.M&P/varnish makers	VM&P/varnish makers
bbis./barrels	dbt./double	g.p./general purpose	retf./refinery	& painters	W/West
b.g./beta-gamma	denat./denatured	gran./granular	resub./resublimed	wheee./warehouse	w.w./water-wts.
bgs./bags	dest.-dist./destruc-	grd./ground	ret./returnable		
bis./balées	tively distilled	i.b.p./initial boiling	SD/specially denatured		
bots./botties	d/dextro-levo	point	s.d./single distilled		
b.p./boiling point	dist./distilled	Imp./imported	SE/Southeast		
b.p./some phosphate	distr./distributor		sec./secondary		
of lime	drvd./defatted				
b.r./boiling range	drums./drums				
bxs./boxes	dom./domestic				

**NOTE:** A unit-ton is 1 percent of 2,000 pounds of the basic constituent or other standard of the material. The percentage figure of the basic constituent multiplied by the unit-ton price shown in Chemical Materials Reporter gives the price of 2,000 pounds of the material.

# **CHEMICAL PRICES**

**WEEK ENDING SEPT 19, 1980**

Carbon Black, low structure, bulk, c.i. works.....	lb.	.240
bags, c.i. works.....	lb.	.270
Intermediate-super-abrasion (ISAF).....	lb.	.25
bgs., c.i. works.....	lb.	.28
super-abrasion (SAF), bulk, c.i., works.....	lb.	.31
bgs., c.i. works.....	lb.	.4050
semi-reinforcing (SRF), bulk, c.i., works.....	lb.	.210
bgs., c.i. works.....	lb.	.240
Carbon black, thermal, medium, bgs. c.i. works.....	lb.	.30
bulk, c.i. works.....	lb.	.32
Carbon black oil, barge, f.o.b. Gulf re- fineries.....	bbis.	10.50
f.o.b. W. coast refineries.....	bbis.	10.50
Carbon disulfide, f.c. consumers, dms., c.i., frt. add. ....	lb.	.36
tech., dms., c.i., frt. add. ....	lb.	.31
tank transpor. (min. 4,000 gals.) frt. add. ....	lb.	.24
Carboxymethyl cellulose (see CMC).		
Cardamom oil, NF, bogs.....	lb.	75.00
Cardamons, decor, Guatemalan, green, Guatemalan, bogs.....	lb.	3.00
Carbon tetrachlore, CP, consumers, dms., c.i., frt. add. ....	lb.	625
Carmin, No. 40, NF, bulk, 100-lb. lots or more, divd. ....	lb.	135.00
Carnauba wax, Paranaiba, No. 1, yel- low, bgs., ton lots.....	lb.	1.95
Ceara, No. 1, yellow, bgs., ton lots.....	lb.	1.75
North Country, No. 2, refined, bgs., ton lots.....	lb.	1.55
Carnauba wax, North Country No. 3, centrifuged, bgs., ton lots .....	lb.	1.10
North Country, No. 3, refined, bgs., ton lots.....	lb.	1.30
Powdered carnauba wax, 20 to 100 mesh, 20c per lb. higher.		
b-Carotene, in vegetable oil, semi-solid suspension, 400,000 A units per gram, 33 lbs. or more. ....	lb.	32.75
b-Carotene, liq. in vegetable oil, 500,000 A units per gram, 33 lbs. or more. ....	lb.	40.75
b-Carotene, liq. beads, 10%, 167,000 A units per gram 50-lb. cans. ....	lb.	26.85
d-Carvone, 25-lb. cans., syn. ....	lb.	48.00
I-Carvone. ....	lb.	7.00
Cascara sagrada bark, bulk, ....	lb.	1.00
Casein, imp., acid-precip., grd. 30- mesh, Australian, edible, same basis, c.i.f. ....	lb.	1.45
Australian, Indust. same basis, c.i.f. ....	lb.	1.365
Cassella acid, 303 mol. wt., dms. frt alid, 100% basis. ....	lb.	3.70
Cassela, Korinti "A" bgs "B" bgs. ....	lb.	.95
Castor oil, raw, No. 1, Braz. tanks. ....	lb.	31
USP 5-9 dms. ....	lb.	.74
reid. dead., 5-9 dms. ....	lb.	.78
blown, 5-9 dms. ....	lb.	.75
dehydrated, bodied, tanks. ....	lb.	.74
dehydrated, unbodied, tanks. ....	lb.	.65
Castor oil, acids dehydrated, dms ricinoleic acid. ....	lb.	1.10
Castor pomace, bgs., container load, f.o.b., Miami, Fla. ....	ton	154.00
Castoreum, nat., cans. ....	lb.	18.00
syn. cans. ....	lb.	11.00
Catechol, CP, 45-kilo cans. 50-239 dms., f.o.b. ....	kilo.	7.83
tech., bgs., 11. same basis. ....	kilo.	3.71
Caustic potash (see Potash, caustic).		
Caustic soda (see Soda, caustic)		
Cedarale oil, dms. ....	lb.	17.50
Cedarwood oil, of Texas, dms., cans. ....	lb.	3.50
Virginia. ....	lb.	3.70
Cedrol, prime dms. ....	lb.	5.25
Cetyl acetate, dist., dms. ....	lb.	4.25
Celery seed, Indian, bgs. ....	lb.	.48
Celery seed oil. ....	lb.	50.00
Cellulose acetate, powd., bgs., t.i. divd. E. ....	lb.	1.30
Cellulose acetate butyrate, powd. 17% butyl content, bgs., t.i. divd. E. ....	lb.	1.75
38% butyl content, bgs., divd. E. ....	lb.	1.58
50% butyl content, bgs., divd. E. ....	lb.	1.81
65% butyl content, bgs., divd. E. ....	lb.	1.63
Cellulose gum, pure, high vis., bgs., 24,000-lb. lots or more works, 1,0,0 Hopewell, Va. ....	lb.	1.60
std., low or medium vis., bgs., c.i. t.i., f.o.b. Hopewell, Va. ....	lb.	1.60
Cerium concentrate CeO <sub>2</sub> , 60 lbs. ....	lb.	1.35
Cerium hydroxide, 90% CeO <sub>2</sub> , dms. works. ....	lb.	5.40
77% CeO <sub>2</sub> , dms., works. ....	lb.	4.20
Cerium oxide, optical grade, bgs., 50- lb. lots or more, divd. ....	lb.	1.85
Cetyl alcohol, NF, cans., c.i., t.i., divd. E. ....	lb.	.88
Chalk (see Calcium carbonate).		
Chamomile flowers, Hungarian, cs. ....	lb.	4.25
Roman, cs. ....	lb.	4.90
Egyptian, whole. ....	lb.	2.75
Chamomile oil, blue, Egyptian. ....	lb.	645.00
blue, Hungarian. ....	lb.	370.00
Chenopodium oil, NF, cans. ....	lb.	15.00
Chicory acid, dry, bogs., frt. add. ....	lb.	13.50
Chiles (see Pepper, red).		
Chloroform anhydride, tech., dms., LL works. ....	lb.	1.50
Chlorinated paraffin, 40% chlorine, bulk, divd., Zone 1. ....	lb.	
60% chlorine, same basis. ....	lb.	
60% chlorine, same basis. ....	lb.	
70% chlorine, realhouse, 50-lb. cans., 6,000 lbs., divd., Zone 1. ....	lb.	



# **CHEMICAL PRICES**

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WEEK ENDING SEPT 19, 1986

J

J. acid, paste, dms., works, 100% ba- sis.....	kilo	4.75	-	unbr.
Japan wax, cs. ....	lb.	5.50	5.80	
Jojoba oil, 65-gal. dms., f.o.b. Arizona producing point .....	gal.	55.00	60.00	edit.
Linseed oil, 5-gal. dms. ....	gal.	15.00	16.00	unbr.

K

Kaolin, water washed, fully calcined, bags c.i., f.o.b. Georgia	ton	255.00	-
NF pwd., colloidal, bacteria controlled, 50 lb. bags, 5,000 lb. lots	lb.	.24	-
Kaolin, uncalcined, No. 1 coating, bulk, c.i., f.o.b., Georgia	ton	94.00	Lime
No. 2 coating	ton	75.00	Lime
No. 3 coating	ton	73.00	Lime
No. 4 coating	ton	70.00	Lime
filter, gen. purpose, same basis as	ton	58.00	Lime
detaminated water washed, uncal- cined paint grade 1 micron avg., same basis	ton	182.00	He sx
dry-grd. airloated soil, same ba- sis	ton	80.00	Umer d-Li Line sys
Karaygum, No. 1, poud., bbls.	lb.	2.25	Line

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Lacquer diluent petroleum 140F.-			
200F. b.r., l.c. New Jersey	1.25	-	
and New York .....	gal.		
Houston, Texas .....	1.29	-	
Lacquer diluent, petroleum 200F.-			
240F. b.r. tankcars, New			
York and New Jersey....	gal.		
Houston, Tex. ....	1.20	1.26	
..... gal.			
Lactic acid, food grade 85%, l.c., f.o.b.			
works .....	lb.		
50%, l.c., frt. equald. ....	lb.	1.06	
lech. 85% l.c., frt. equald. ....	lb.	.82	
Lactose, edible, reg. bgs., c.i.,			
works .....	lb.		
Lactose, USP, reg. dms., c.i., L.I., frt.			
equald. ....	lb.	.22	.28
Lactose, USP, spray dried, bgs., L.I., frt. equald. ....	lb.	.56	.69
Lactose, USP, spray dried, bgs., L.I., frt. equald. ....	lb.	.80	

Liner, (red 53) bbls., lrt.	lb.	5.70	-	Lithium hydroxide, c.t. t.i. divd 10,000 or more . . . . . lb. 23.50
yd., cosmetic, 400-lb.				Lithium hydroxide, monohydrate, dma, c.t. t.i. divd . . . . . lb. 1.93
works . . . . .	lb.	1.18	1.25	Lithium hypochlorite, c.t. t.i. works lb
aceutical, 400-lb dms				Lithium metal, 1,000-lb lots or more, divd . . . . . lb. 1.07
ts. . . . .	lb.	1.15	-	Lithium nitrate, tech. dms., 100-lb. lots . . . . . lb. 22.70
under 2% f.f.a.), 400-lb				Lithium stearate, bgs. c.t. frt alld . . . . . lb. 3.25
, works . . . . .	lb.	1.08	113	Lithium sulfate, anhydrous, l.i. divd. lb
Fats & Waxes market report.)				Lithol red toner, barium, dms., frt alld . . . . . lb. 3.09
1. dms., c.t. f.o.b.	lb.	.34		Lithol rubine toner (red 57), resinated, dms., frt alld . . . . . lb. 3.27
the basis . . . . .	lb.	.28		calcium, dms., same basis . . . . . lb. 3.80
a. winter-strained, dms.				Locust bean gum, powd. bgs . . . . . lb. 5.60
ts. . . . .	lb.	.41	-	2,4-Lutidine, dms. t.i. frt equald. kilo
ame basis . . . . .	lb.	.33	-	Lycopodium, 50 lb dms. . . . . . lb. 5.76
ning, dms., c.t. same ba-				1-Lysine, monohydrochloride, feed grade, 10,000 lbs divd . . . . . lb. 8.00
Chicago . . . . .	lb.	.43	-	10
erning, tanks, same ba-				
ts. . . . .	lb.	.35	-	
Mi. rad. 1 1/4c. higher, except Texas, 2c. and West				
st. 3c. higher . . . . .	lb.	2.50	-	
Turkish . . . . .	lb.	3.85	-	
2 drum f.o.b. . . . .	lb.			

com., pure bgs., c.l. . . lb. .65 .71

Acrylate, dms., c.l., t.i. ks.	lb.	7.75	-				
Abrialis, 30-32% dms. lb.	4.00	-					
owers, ord.	lb.	.65	.75				
ls.	lb.	.80	.90				
ower oil, NF, French,	lb.	1.10	1.19				
ester, cms.	lb.	9.25	13.50				
anish, dms.	kilo	15.00	22.00				
te, purif., flake, 400-lb. works.	lb.	.46	-				
lake, t.i., 400lb. dms. ks.	lb.	.37	-				
basic, sulfate, bgs., c.l., t.i., t.o.b.	lb.	.87	-				
ate, (see Lead white basic carbonate)	lb.	3.25	-				
e, 400-lb. dms., works lb.	lb.	.66	.70				
t.i., works	lb.	.65	-				
rate, liq. conc., dms., t.i. ks, frt. equald.	lb.	.85	-				
ivid.	lb.	.18	.18½				
icate, milled, bgs., c.l. works.	lb.	.58½	-				
s., c.l., same basis	lb.	.57½	-				
enate liq., 24% Pb. dms.	lb.	.93	-				
llid.	lb.	.32½	-				
tech., cryst., 400-lb. dms. works.	lb.	.37½	-				
le (see Lead dioxide).	lb.	.37	-				
% Pb <sub>2</sub> O <sub>3</sub> , or less, bgs. c.l. ks.	lb.	.37	-				
97% Pb <sub>2</sub> O <sub>3</sub> , bgs. c.l. ks.	lb.	.37½	-				
3% Pb <sub>2</sub> O <sub>3</sub> , bgs., c.l., same b.	lb.	.37½	.40½				
(see Lead, white, basic silicate).	lb.	.35	-				
ochromate, bgs., c.l., ks.	lb.	.35	-				
(see Lead, blue, basic sulfate and Lead, white, ic sulfate).	lb.	.35	-				
<b>M</b>							
Maco, East Indian, silings.	lb.	4.95	5.00				
Sinuw #2.	lb.	6.60	6.75				
Magnesa. tech., light, neoprene- grnde,bgs., c.l., t.i.,works lb.		.75	.81				
Magnolia, syn. tech., chemical- grade, bulk, c.l., t.i., works	ton	330.00	-				
bags, c.l., t.i., same basis	ton	365.00	-				
dondburned, bulk, same ba- sis	ton	392.00	-				
bgs., same basis	ton	409.00	-				
Magnesia, nat. tech., heavy, 85%, 150 mesh, bulk, c.l., t.i., t.o.b. Nev.	ton	232.00	-				
90%, 325 mesh, same basis	ton	285.00	-				
Magnesium bromide, 80-lb dms., hex- ahydrate	lb.	2.50	-				
Magnesium carbonate, light, tech., bgs., c.l., t.i., works, frt. equald.	lb.	.73	.78				
USP, lite bgs., c.l., same basis	lb.	.74	.80				
USP, heavy, bgs., c.l., same basis	lb.	.83	-				
Magnesium chloride, anhyd., 92%, flake or pebble dms., c.l., works	lb.	.124	.15				
Magnesium chloride, hydrous, 99%.	lb.	.14½	-				
flake, bgs., c.l., works	lb.	.425	-				
Magnesium gluconate, 100-lb. dms., t.o.b. works, E.	lb.	.78	-				
Magnesium hydroxido, NF, powd., dms., c.l., t.i., works frt. equald.	lb.	.22	.264				
Magnesium lauryl sulfate, tanks, t.o.b., works	lb.						
Magnesium metal, 99.8%, ingots, 10,000-lb. lots or more, f.o.b.	lb.						

resinate, fused, 3½% Mn. s. int. alid. .... lb.	.34 ¼	-	Methyl violet toner, tungstated, PTA, bbs., same basis. .... lb.	4.70	5.20
½-7% Mn. dms. .... lb.	.42	-	4,4,-Methylene dianiline (p,p-dl- aminodiphenyl methane) crude, dms., t.l. f.o.b. .... lb.	1.75	-
o-sulfate, fertilizer grade. oil-paste, 75%-78% MnSO <sub>4</sub> , kilo bgs., 50-ton cars, divd. of Miss. .... ton	280.00	-	purif., flake, same basis. .... lb.	2.25	-
per car, same basis.... ton	245.00	-	Methylene di-p-phenylene di-isocyanate (see diphenylmethane 4,4,-di-isocyanate).		
e sulfate, 28% Mn, gran. s.c.t.l. works. .... ton	330.00	-	Methylene chloride, tanks, 4,000 gal.- min., consumers, divd.... lb.	.35	-
lubricant, liq., 6% Mn, dms. alid. .... lb.	.60	-	Methylenepentanediol (see Hexylene glycol).		
comt., powd. dms. t.l. works. .... lb.	3.02	-	Methylphenylpyrazolone (see 1-Phenyl-3-methyl-pyrazolone- 5).		
French. .... lb.	.88	.89	a-Methylstyrene, f.o.b. shipping pt. lb.	.44	-
plan. .... lb.	.61	.62	p-Methylnaphthalene, bulk, works. gal.	1.38	-
2-Mercaptobenzothiazole). 2-Mercaptobenzothiazyl disulfide).			Methylthionine chloride (see Methyline blue).		
Diphenylmethane 4,4,-di-isocyanate)			Mica, dry-grd., joint cement, plastic, 50 lb. bgs., c.t.l. works. .... lb.	.07 ½	-
bgs., c.t.l. 40,000-lb. in. t.o.b. works. .... lb.	.51 ½	.59 ½	dry-grd., roofing, 20 to 80 mesh, works. .... lb.	.07	-
	.50	.58	paint or lacq., wet-grd., 325-mesh,		

II, same basis	.50	.50	bgs., c.l., f.o.b. works.	.164	-
formaldehyde resin, g.p., t.i.	.55	.60	rubber, bgs., c.l., f.o.b. works...	.164	-
I, alid	.55	.60	wallpaper, bgs., c.l., f.o.b. works, lb.	.22	-
g compounds, same ba-	.48½	-	Microcrystalline wax, petroleum, coat-		
ls	.11	-	ing grades, FDA, tanks,		
in oil, crude, tanks, works At-	.12	-	works	.36½	.46½
lantic Coast			laminating grades, FDA, tanks,		
arts, same basis,			works	.36½	.48
art, USP, Brazilian large and			Mineral oil, white, 50-65 vis., USP light		
regular crystals, spot, cs.,			tanks, refy	2.38	-
uk.	8.75	7.50	65-75 vis., tanks, refy	2.42	-
SP, racemic, 100-450 lbs. lb.	9.00	-	80-90 vis., tanks, refy	2.46	-
obenzothiazole, bgs., t.i.			145-155 vis., tanks, refy	2.63	-
works, frt. alid	1.25	1.55	USP 180-190 vis., tanks, refy	2.54	-
benzothiazyl disulfide, t.i.			200-210 vis., tanks, refy	2.56	-
ims, works, frt. alid	1.33	1.66	340-350 vis., tanks, refy	2.65	-
chloride NF, gran, powd.			Mineral spirits, petroleum, odorous,		
100-lb. dms, f.o.b. works, lb.	6.50	-	tanks, New Jersey	1.83	1.88
c oxide, red, purif, 100-lb.			Houston, Tex.	1.78	1.78
dms, f.o.b. works	7.00	7.25	Mineral spirits, petroleum, regular,		
100-lb. dms, same ba-			tanks, New Jersey	1.41	1.49
sis	5.50	7.00	Houston, Tex.	1.41	1.43
ow, NF, 100-lb. dms, sameba-			Molybdate orange, bogs	1.52	1.95
sis			Molybdenum metal, com., i. powd.,		
100-lb. dms, same ba-	7.00	7.25	99.8%, dms, works	13.50	-
sis			Molybdenum trioxide, CP, dms.,		
5.50	7.50	works, 24,000 lbs. or more,	5.26	-	
chloride (see Calome).			tech., chemical, dms., 24,000 lbs. or		
y, ammoniated (see White precipitate USP XV)			more, basis	2.65	2.85
oxide, tanks, divd	.46	-	tech. metallurgical, dms, same basis, b.	2.65	2.85
rylic acid, glacial, 99%, dms.			Molybdcic acid (See Ammonium Dimolybdate)		
t.i., frt. equaid	.87	-	Monoammonium phosphate, fert.		
ks, works, frt. equaid	.78	-	grade, min. 13% N, 52% P.		
hemphatamine hydrochloride,			bulk, c.l., f.o.b. Fla.		
dms			works	155.00	-
hemphatamine hydrochloride,	12.00	16.00	Monoammonium phosphate, tech.,		
dms			bgs., c.l., f.o.b. works, frt.		
not, syn., tanks, 4,000 gals.,	4.50	7.00	equaid	100 lbs.	54.00
f.o.b. producing point, Gulf			food grade, bgs., c.l., t.i., same ba-		
Coast	.52	.71½	sis	100 lbs.	59.25
(see Hexamethylenetetramine).			Mono-tert-butyl-m-cresol, bulk, t.i., lb.	1.69	-
tonium hydroxyanalogue, dry,			Monobutylamine, bulk, divd., lb.	.96	1.00
88% activity t.i., frt. alid	.06	-	Monochloroacetic acid, purif. (see Chloroacetic acid, mono).		
iquid, 88% activity t.i., frt.			Monochlorobenzene, tanks, f.o.b. lb.	.42½	-
alid	.88	-	Monochloroformic acid, f.o.b. lb.		
thionine (see Racemethionine)					

chlor allyl red toner deep dabs, bbls.	lb.	9.50	-
chlor shades, bbls.	lb.	7.75	-
chlor-3,5-disulfonic acid, disodium salt (see R salt).			
chlor-5-sulfonic acid (see L acid).			
chlor-5-sulfonic 8-amino acid (see S acid).			
chloramine sulfonic mixed acid (see Clave's acid).			
chloramine, tanks, f.o.b. works.	lb.	2.10	-
chlorphthalimide-5-sulfonic acid (see Laurent's acid).			
chlorphthalimide-4,8 disulfonic acid (see Cassella acid).			
chlorphthalimide-1-sulfonic acid (see Tobias acid).			
clor oil, 20°F. t.l., f.o.b. works			
dms.	lb.	.52	-
tanks, f.o.b. works	lb.	.47	-
"F.I., f.o.b. works	lb.	.52	-
tanks, f.o.b. works	lb.	.44	-
"F, dms., l.l., f.o.b. works	lb.	.48	.49
tanks, f.o.b. works	lb.	.39	-

# HEMICAL PRICES

mesh. works . . . . .	ton	20.00
USP, gran. powd. 25-kilo lots . . . . .	kilo	125.00
oil, expressed, USP, Calif. dms., f.o.b. plant . . . . .	lb.	1.20
used Valencia, dms. . . . .	lb.	1.00
dist., crs. f.o.b. plant . . . . .	lb.	.40
dms. . . . .	lb.	.50
an. . . . .	kilo	1.20
Indian, bitter, NF X, cns. . . . .	lb.	
cns. . . . .	lb.	6.50
peel, bitter, Haitian bls. . . . .	lb.	.38
b., Greece, 30M . . . . .	lb.	2.35
peel . . . . .	lb.	2.36
co. . . . .	lb.	1.05
cam oil, Spanish, cns. . . . .	kilo	35.00
oil, Florentine, bls. . . . .	lb.	4.00
wd., bbls., bxs. . . . .	lb.	4.60
the bls. . . . .	lb.	3.00
wd., bbls., bxs. . . . .	lb.	4.60
try wax, raid., pure, bgs. . . . .	lb.	3.26
acid, bgs., c.i. works . . . . .	lb.	.44
naphthoic acid dms. works, tech. . . . .	lb.	2.55
inofine base, pure, 1,000 lbs. frt. std. . . . .	lb.	8.00
quinoline sulfate, 100 lbs. frt. std. . . . .	lb.	4.00
odium metal, works . . . . .	Troy-oz.	145.00
oil (see Oils, Fats & Waxes Market Report)		
oil acid, dbl-dist. dms. . . . .	lb.	.31½
anks. . . . .	lb.	.30
d. dms. . . . .	lb.	.42
tarks. . . . .	lb.	.35
n kermel oil, bulk, c.i.f. U.S. ports . . . . .	lb.	.10
	lb.	.00

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dium metal, works.	Troy-oz.	145.00	-
oil, (see Oils, Fats & Waxes Market Report)			
oil acid, dbi-dist. dms.	lb.	.31½	-
tanks	lb.	.30	-
db. dms.	lb.	.42	.45
tanks	lb.	.35	-
Apricot kernel oil, bulk, c.i.f. U.S.			
ports	lb.	.10	.10½
narosa oil, Indian dms.	kilo	36.00	-
nitric acid, 90%, tech., bags.	lb.	.53	-
tanks	lb.	.51	-
avaine hydrochloride, NF powd.,			
Imp. bulk	kilo	56.00	-
Russia, Hungarian, 100 AU bgs.	lb.	.80	-
Spanish, 110 AU bgs.	lb.	.90	-
affin, fully-reid., 127-130F., ASTM,			
tanks, refy.			
130-135 F., ASTM, tanks, refy.			
140-145 F., ASTM, tanks, refy.			
150-155 F., ASTM, tanks, refy.			
black wax, 5% oil, tanks refy.			
12% oil, tanks refy.			
20% oil, tanks refy.			
IP temperatures are an arbitrary 3F higher than ASTP.			
formaldehyde, 91%, flske. bgs.			
c.t. t.i. divd.	lb.	.29½	-
95%, powd., bgs., c.t. t.i. divd. lb.		.39½	-
aldehyde, tech., 98%, 55-gal. dms..			
t.i. divd. E.	lb.	.76½	-
tanks, divd. E.	lb.	.58½	-
athion, ethyl, dms., int. std.	lb.	1.75	-
athion methyl (see Methyl parathion).			
a toner red, bbs.	lb.	3.75	-
chlorinated, (red 4) kgs.	lb.	3.75	-
choucouli, Indonesian, dms.	kilo	20.00	22.00
Apricot kernel oil, USP (see Apricot kernel oil).			
Animal meal (see Oils, Fats & Waxes market report).			
Ant oil (see Oils, Fats & Waxes market report).			
Ant dom., NF, citrus, powd., 100-			
kilo lots divd.	lb.	3.30	3.70
Argonio acid, nat., tanks, min. int.			
std.	lb.	.70	-
sym. tanks, f.o.b. int. std.	lb.	.70	-
Nicinic, potassium, non-sterile, 200-			
billion-unit lots...	billion units		
nolin, procaine, sterile 50-billion-			
unit lots, ... billion units.			
myrrhol oil, dms.	lb.	36.00	-
nicotianophenol, 50-lb. bgs. t.i.	lb.	5.90	-
f.o.b. Wichita, Kan.	lb.	.55	-
Isaerythritol, tech., bgs. c.i.f. f.o.b.			
int. std.	lb.	.71	.72
Isaerythritol, di- and tri-isomers (see Dipentaerythritol and			

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high solvency (see Solvent naphtha, petroleum, cleaners (see Cleaner naphtha), VM&P, petroleum, tanks, New Jersey and New York-	gel.	1.28
ton, Tex.	gel.	1.20
ene, crude, dom., 78°, tanks,	lb.	.22
works.	lb.	
lene, phthalic anhydride		23½
ene, tanks, works.	lb.	
lene, petroleum, 80°C.,	lb.	.30
c.b.	lb.	
ene, raid., bales, flakes, whole		
alers, jobbers, dim.	lb.	.65
works.	lb.	.15
oic acid, crude, bulk, works	lb.	.75
220 acid, same basis	lb.	
ol, ground, dims., liq. ph.	lb.	1.51
ol, tech. flake, 80-lb. bgs, q.t.	lb.	1.10
ol.	lb.	

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56 CHEMICAL MARKETING REPORTER September 22, 1986





**UPE UNIVERSAL PROCESS EQUIPMENT, INC.**

MAILING ADDRESS BOX 338 ROOSEVELT NEW JERSEY 08556  
PLANT SITE U.S. 130 SOUTH ROBBINSVILLE NEW JERSEY 08891 609-443-4545 TELEX 833021  
WE WANT TO BUY YOUR SURPLUS USED EQUIPMENT/PROCESSES/PLANTS

OVER 15,000 PIECES OF PROCESS EQUIPMENT IN STOCK... CALL TODAY!

LATEST ADDITIONS

8M ROSENMMUND 316 SS FILTER  
900 GAL. READCO SS SIGMA MIXER  
5000 GAL. PFAUDLER G/L REACTOR  
RE-GLASSED  
SHARPLES SS MDL. P-3400 (3)  
4,200 GAL. HAST C REACTOR 125 AND FV/175  
UNUSED 1900 SQ. FT. HAST C HEAT EXCHANGER

PLANTS

10,000 TPY Maleic Anhydride  
535 MM LBS/YR Paraxylene Plants  
2 Industrial sites .35 & 50 acres

(2) Niagara 36H190 SS Filters  
(5) 290 cu. ft. SS rot. vac. dryers system  
(1) 4000 gal. G/L reactor 100FV/150FV  
(1) 6000 gal. SS reactor 70/175 psi, 1/4 pipe coil jkt.  
48" x 24" TOLHURST SS "BATCHAMATIC" CENTRIFUGE COMPLETE LATE MODEL STILL INSTALLED (6)  
(2) 1200 TONS CARRIER CHILLER SYSTEM  
(2) 6' x 6' RENNENBERG 304 SS ROTARY DRYERS COMPLETE & (3) 500 SS B/CENTRIFUGE NASH VACUUM PUMP MDL. CL 3001 AND 9001 2 DRAIS 30 HP & (2) 75 HP SAND MILLS 316 SS 12" x 30" & 24" x 38" SS B/CENTRIFUGE CUMBERLAND PELLETIZERS 6' & 6' (7)  
30 CU. FT. 316 SS DBL. CONE VAC. DRYER

4000-5000-6000 (CALL AGITATED)  
REACTORS VERY ATTRACTIVE PRICES

CENTRIFUGES

BASKET  
48" x 30" Sharplee 316 mdl. T1600 (3)  
48" x 30" Telleret Heat. C. Auto (3)

PUSHER TYPE  
Bird-Esche Wyss, 316SS, Mdl. P600, 20', UNUSED.  
DeLeval, 25", 2-Stages, 316SS

DISC/BOWL  
DeLeval, Mdl. BRPX-300, SS; vert., & Mdl. BA-00, SS  
Westphalia 304 SS Mdl. 3AMN-5036

DeLeval, 25", 2-Stages, 316 SS

SOLID BOWLS  
Sharpe, Mdl. P1000, P3000, P5000, P5400, (2), PY 414 SS  
Bird, 40" x 60", 36" x 72", 32" x 50", 24" x 38", 18" x 28", 16" x 28", SS  
Podleski, Mdl. 6000 comp. w/controls

VACUUM DRYERS

325 cu. ft. Abbe, 304 SS dbl. cone  
200 cu. ft. 316SS, 6' x 11', rotary  
164 cu. ft. Devine 304 SS dbl. cone

164 cu. ft. Paterson "Conform," 316SS Dbl. cone  
150 cu. ft. SS Twin Shell  
150 cu. ft. SS, & 150 cu. ft. Nickel clad

125 cu. ft. SS & CS, 4' x 14', 105/90/150 psi  
125 & 83 cu. ft. Bullovolok SS Rotary  
60 cu. ft. Paterson Kelly, SS, dbl. cone  
40, 30 & 20 cu. ft. Stokes, SS rotary (4)

30 cu. ft. Pfaudler G/L dbl. cone vacuum  
**WE RENT/LEASE & SELL CHILLERS**

PLEASE CALL CHARLES MASON FOR FURTHER INFORMATION AT 609-443-4545

**UPE**

TO RECEIVE OUR FREE 300 PAGE ENCYCLOPEDIA OF CHEMICAL PROCESS EQUIPMENT  
CALL OUR TOLL FREE NUMBER 800 CHEM-CAT (800-243-6228) IN N.J. - 609-443-4545

**UPE**

CORN SYRUP/STARCH PLANT

200,000 lbs./HR @ 300 psi package boiler  
150,000 lbs./HR @ 700 psi package boiler  
50,000 lbs./HR @ 250 psi package boiler  
6' x 30' CS rot. hot air dryer  
4' x 31' 72 tube SS rot. st. dryer  
24,000 sq. ft. triple effect evap. TI tubes  
600 sq. ft. U.S. Autolex filter calcite lnd (3)  
500 sq. ft. Hercules 316 ELC pr/H filter (4)  
12' x 16' Elenco belt CS recr. filter (2)  
7' x 16' Elenco 316 SS precoat filter (2)  
8' x 10' Elenco 316 SS pre coat filter (2)  
500 sq. ft. 316 SS plate h. extch.  
265 sq. ft. APV 316 SS plate h. extch.  
Ducan SS wet scrubber 11500 cfm  
20,000 gal. 316L SS mix tank 13' x 20'  
9,000 gal. SS mix tank 13' x 6'  
7,000 gal. 316 SS cone bottom, mix tank 10' 8" x 9' 6"  
6,500 gal. 316 SS cone bottom, mix tank 12' 7" x 8'  
5,600 gal. 316 SS mix tank 12' x 6'  
3,000 gal. SS mix tank 9' x 6' (3)  
6,000 gal. 316 vac. tank 10' 8" x 9' 6"

PLUS MANY MORE ITEMS CALL FOR DETAILS

HEAT EXCHANGERS

SO.FT.	MATERIAL	SO.FT.	MATERIAL
14,615(UNUSED)	TITANIUM	1,600(UNUSED)	304SS/304SS
12,250(UNUSED)	CS/304LSS (3)	1114HUM	
9,134	304SS/304SS	SS/304SS (2)	
8,210	CS/304SS	CS/304LSS	
7,775(UNUSED)	304LSS (6)	785(UNUSED)	304SS/204SS
4,840(UNUSED)	CS/304LSS	608	304LSS (2)
3,600(UNUSED)	GRAPHITE	586(UNUSED)	CS/304SS
3,489(UNUSED)	304LSS	481(UNUSED)	CS/304LSS
2,721	C/S GRAPH	482(UNUSED)	CS/304LSS
2304	TITANIUM	308(UNUSED)	CS/304LSS
2,000	304/304SS	292(UNUSED)	CS/SS (9)
1612	TITANIUM	275	316SS/316SS
		208(UNUSED)	SS/SS

8,500 GAL. INCONEL REACTOR, 60 PSI, AGIT.  
2,000 GAL. 316SS REACTOR, 1000/100 psi  
1,300 GAL. 316SS REACTOR, 150 FV/125 PSI

4 PASSAVANT MDL. 200  
VAC-U-PRESS BELT FILTERS  
250 SQ. FT.

GLASS \* GLASS \* GLASS  
REACTORS

3,000 GAL. DE DIETRICH, 100/90, PHILA. DRIVE  
3,000 GAL. RA SERIES, 100/90 TW, REGLASSED  
2,000 GAL. RA SERIES, 100/90 TW, REGLASSED  
1,000 GAL. RA SERIES, 100/90 TW, REGLASSED  
1,000 GAL. E SERIES 25/90 (4)  
780 GAL. 25/90 TW (2)  
500 GAL. RA SERIES, 100/90, TW  
400 GAL. E, SERIES, 25/90, TW  
300 GAL. E, SERIES, 25/90, TW  
200 GAL. E, SERIES, 25/90 REGLASSED, TW  
100 GAL. E, SERIES, 25/90, TW

OVER 100 GLASS LINED REACTORS IN STOCK

GLASS LINED TANKS

FROM 5-22,000 GALLONS  
TRAILER LOADS OF GLASS LINED PARTS AVAILABLE  
• LOU FALCOME-Q/R, 1/1, SPECIALIST WITH 21 YRS.  
EXPERIENCE IS HERE TO HELP YOU!

FILTERS

12' x 15' "EMICOBELT" ROTARY VAC. FILTER SYSTEMS (2)  
8' x 20' EMICO, 316SS, HORZ. VAC. BELT EXTRACTOR  
8' x 14' EMICO, 316SS, PRECOAT ROTARY VAC. FILTER  
8' x 12' AMETEK, 316SS, ROTARY VAC. FILTER, 30.80 FT.  
5' x 8' AMETEK, 316SS, ROTARY VAC. FILTER, 137.80 FT.  
6' x 21' EMICO POLYPRO EXTRACTOR SETTLERS (3)  
4' x 20' STYLIN HORZ. VAC. BELT FILTER SYSTEM  
12' x 13' EMICO H. BELT EXTRACTOR  
40' SHIVER ALP/POLY PRO COR. FILTER PRESS, 67 CHAMBERS  
48" POLYPRO REC. P/T AUTO FILTER PRESS  
42" DURCO QUADRAPHASE MDL. QPF-42/20-55, POLYPRO

DUST COLLECTORS  
SS & CS, PULSE JET AND SHAKER TYPE  
400-112,000 SQ. FT.

WE HAVE OVER 700 SS TANKS  
IN STOCK

WE WANT TO BUY YOUR  
SURPLUS EQUIPMENT, PROCESS UNITS  
AND COMPLETE PLANTS. WE HAVE  
OUR OWN DISMANTLING CREWS

MUCH MORE !!!

COMPLETE PLANT SITE FOR SALE

Former Synthetic Gas Plant. 60 acres of land, 75,000 sq. ft. of building built in mid 70's. Complete with all improvements including rail and pipeline transmission. We will sell entire facility or individual pieces of equipment. Major items are:

(2) 7.2 million cu. ft. per day hydrogen plant

(4) 150,000 LB/HR 620 psi Boilers complete with Demineralizer systems

(2) 2500 KVA Generators

Emergency Turbine Generator Solar Centaur 3700 HP complete

100's of Heat exchangers-CS and SS up to 15,000 sq. ft.

100's of Pumps and Compressors

100's of Tanks - both atmospheric and pressure

CALL FOR DETAILS!

19,000 GALL. 316SS  
FERMENTATION SYSTEM

CALL NOW ABOUT GIANT RHODE ISLAND & NEW JERSEY LIQUIDATION  
ALL EQUIPMENT STILL INSTALLED

(89) Glass lined & SS Reactor systems complete with condensers, receivers and control panels. from 50 gal. to 4000 gal.

(40) Filter Presses polypro & SS from 18" to 56" plate and frame recessed plates.

(25) Vacuum dryer systems complete with condensers, vacuum pumps and receivers.  
Double Cone: glass & SS.  
Rotary 316 SS vacuum dryers.

Vacuum Shelf SS and Heresite lined.

(18) Centrifuges 316 SS automatic basket centrifuges complete with controls and nitrogen purge  
Scrubber systems/Vacuum filter systems/Glass lined and SS tank farms.

STILL INSTALLED... CALL NOW!

21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

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21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

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21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

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21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

21350-B.P. 500 gal. Sigma steel, jkt: 125 psi, 150 HP, Hyd, tilt

## RIGGING/DISMANTLING DEMOLITION/ASBESTOS REMOVAL

WE ARE EXPERTS AT DISMANTLING, REERCTION, RIGGING DEMOLITION AND ASBESTOS REMOVAL WITH TERRIFIC REFERENCES BOTH NATIONALLY AND INTERNATIONALLY

CALL US TODAY FOR A QUOTATION ON YOUR CURRENT NEEDS OR ADD US TO YOUR BIDDERS LIST FOR ANY FUTURE PROJECT (201) 390-9550

### DRYERS

- (1) 24" dia. x 36" Bullock 58 dble. drum dryer
- (2) 32" dia. x 108" Blaw Knox Cl dble. drum
- (3) 32" dia. x 178" Bendix SS belt drier
- (3) 35" dia. x 120" Blaw Knox Cl dble. drum
- (4) 42" dia. x 28" drum flaker, chrome plated drum
- (4) 48" dia. x 40" Cl flaker, mfg. by Buffalo Foundry
- (5) 48" dia. x 40" drum flaker, nickel plated drum, mfg. Blaw Knox

### Fluid Bed

- (1) 60 K. Automatic, Batch, 6'x9', 55,000
- (1) 100 K. Aeromatic Model ST 100, sanitary 88

(1) Flaptrack Model FA 250, SS, 20 HP XP

### Holoflite

- (1) Western Precipitation Model PBSSO-A, twin screw, 12" dia. x 20' long, SS constr., jkt., rated 15 psf, complete with 7.5 HP vari-speed drive.
- (1) Holoflite Model 1000, Turbo Processor, CS, single screw, 18" x 16' long, rated 110 psi @ 340° F., sprocket & chain drive by 1.5 HP vari-speed drive.

### Rotary Vacuum

- (1) 100 Cu. Ft. Stokes, SS constr., comp.
- (2) 100 Cu. Ft. Pfaudler, Double Cone, G/H, .30 AFV/100 psf jkt., 15 HP vari-drive
- (1) 100 Cu. Ft. Blaw Knox, Nickel
- (2) 100 Cu. Ft. Blaw Knox, Nickel
- (2) 72 Cu. Ft. Blaw Knox, Nickel
- (1) 60 Cu. Ft. Titanium Double Cone
- (1) 50 Cu. Ft. Gemco, 310SS sanitary, double cone
- (1) 37.5 Cu. Ft. Hg. Pl. Heris. Thin Film, vac. int. & 150 psf, 100 AFV/100 psf
- (1) 20 Cu. Ft. Abbe Twin Cone, 304SS

### Spray

- (1) 30" x 3' Bowen Laboratory w/3" cone bottom, SS constr., w/centrifugal atomizer, 3 HP blower & motor (1)
- (1) Niro 1000, 100 cu. ft. w/2" cone w/centrif. atomizer 55 contacts
- (1) 7'10" Dia. Anhydrite Complete System, sanitary 88
- (1) 18" dia. Bowen compit. system SS contacts, new 1976

### CENTRIFUGES

- (1) Delsol BRP 300, SS, 20HP
- (1) Unused Model 8-10 Podbilalok, Alloy 20
- (1) Sharples A-25, 316SS
- (1) Alfa-Laval SS Decanter, Horiz. Mdl. NX34
- (2) Dorr Oliver Mdl. CH30 CSU "Marco", 316SS contacts, 160 HP

- (1) Baker Perkins 8-12 "Pusher Type," 55, 50 HP
- (2) Sharples A-25, 316SS, 20HP, contour bowl.
- (2) Bird 24" x 36" 55, 40 HP
- (3) Sharples P-3000, 316SS, 30HP
- (1) Sharples P-1000, 55, 20HP
- (1) Unisted 35 x 68, 317L 65

- (1) Tolhurst 48" x 24" perf. basket, 316SS sanitary, auto. plow & discharge, rated 88 psf/cu. ft. @ 900 RPM, 20 HP.

- (1) Tolhurst 48" x 24" Batchmaster, 316SS, perf. basket, w/hyd. plow & 20 HP hyd. drive

- (2) Tolhurst 48" x 24" Batchmaster, Horiz. lined, perf. basket, w/hyd. plow & 20 HP hyd. drive

- (1) Western Industries 48" x 36", 316SS

- (1) Tolhurst 48" x 24" suspended type, 88 perf. basket, 20/10 HP

- (1) Sharples Tornado 48" x 30", 316SS, perf. basket, 40 HP XP

- (1) Alfa Laval Model MAPX 210 T24, SS welded parts

- (2) Sharples C-27, 316 SS, welded parts, 40 HP

- (1) Sharples C-20, Super-D-Hydrat, SS, 30 HP

- (1) Dorr Oliver Mercone Screamer Model C-400 X2, all SS, twin screw dshc., 10 HP

### PARTIAL LISTING ONLY

# IDM

## RECENT PURCHASES

### • FILTER BONANZA •

**Sparkler pressure leaf filters, All stainless steel construction**

2-Model #3308

1-Model #3308-2

1-Model #3304

1-Model #3302

**400 gal. G/L Pfaudler Vert Re-clever, 55 Psi, 1750 gal. Reactor 316 SS, 15 PSI Int. 40 psf Jckt. St Regis Bag Packer, Model #718 MLT.**

**5000 Gal. 304 SS Jckt'd. Mix Tank. 2' dia. x 3' Chrome Plated Flaker**

### EVAPORATORS

**1-562 Sq. Ft. 316ELC, Hercules, 28 leaves**

**1-512 Sq. Ft. 316SS, Niagara, 21 leaves**

**1-400 Sq. Ft. R/L Sparkler**

**1-327 Sq. Ft. 304SS, Ind. Filter, 11 leaves**

**1-220 Sq. Ft. Durco 316 SS, 11 Leaves 1-250 Sq. Ft. Pronto Mdl. #3255, 75 psig**

**1-Approx. 208 Sq. Ft. SS, Sparkler, Horiz.**

**1-200 Sq. Ft. S.S. Hercules, Horiz.**

**1-191 Sq. Ft. Enzinger, SS, Vert., 75 psf**

**1-154 Sq. Ft. Sparkler Series 55-28, 316SS**

**1-150 Sq. Ft. Horiz., 12 Vert. Leaf 316SS**

**1-135 Sq. Ft. Ni, Bowser, Vert.**

**1-35 Sq. Ft. Hercules Model 5, 316 SS, horiz. tank vert leaves 50 psi**

### ROTARY VACUUM

**1-56 Sq. Ft. KS, Inconel 600**

**1-56.5 Sq. Ft. K-S, 316SS, flexible bell dshc.**

**1-57.92 Sq. Ft. Feinc, SS w/edited parts, spring dshc., 56" dia. x 6" face drum**

**1-132 Sq. Ft. Dorr Oliver, 304SS, max-bell dshc.**

**1-200 Sq. Ft. Elmco, 316SS, 8"x8"**

**4-250 Sq. Ft. D.O. 316L SS Precoat, 6" x10", sanit**

**1-250 Sq. Ft. K-S 316SS, coll. dshc.**

**1-300 Sq. Ft. Elmco, 316SS w/edited parts, precoat type w/knife dshc., 10" dia. x 10' drum, compit. w/control panel & aux. equipment**

**1-314 Sq. Ft. Elmco, precoat dshc., 316SS**

**1-400 Sq. Ft. Elmco, CS, Precoat**

**1-600 Sq. Ft. Elmco, 316SS, bell dshc.**

**1-3'x1" 316SS, knife dshc.**

**1-3'x1" Dorr Oliver, FRP w/receiver & Nash vac. pump, 10 HP**

**1-3'x1" K-S comp. sys., 316 SS Flex-belt dshc.**

### BLENDERS

**800 Cu. Ft. 414-BH, 2000 cu. ft.**

**1-400 Cu. Ft. 75HP**

**1-USED 400 Cu. Ft. Marion Paddle, CS, 75 HP**

**200 Cu. Ft. CS. Dbl. Con., 30 HP**

**200 Cu. Ft. CS. Dbl. Con., 30 HP**

**65.3 Cu. Ft. 316L Dbl. Cone, 7.5 HP**

**65 Cu. Ft. CS. Dbl. Cone, 7.5 HP**

**65 Cu. Ft. 316L Dbl. Cone, 7.5 HP**



# CMR MARKETPLACE

CHEMICAL MARKETING REPORTER'S CLASSIFIED ADVERTISING SECTION

**COPY DEADLINE:** Wednesday Noon preceding date of publication.

**RATES/Classified Ads:** \$57.75 for 36 words or less; \$9.75 for each additional six words or fraction. No display. First two words printed in bold face type. Non-display advertisements payable in advance, except for contract customers (not subject to agency commission).

**REPLIES:** Send replies to classified ads with box numbers to CHEMICAL MARKETING REPORTER, 100 Church St., New York, NY 10007-2694.

**INFORMATION:** For further classified advertising information, call 212/732-9820.

## CHEMICALS OFFERED

Following products from People's Republic of China available in large quantities. Inquiries invited. 10,000 M/T Ephedrine HCl, 10 M/T Pseudoephedrine. Both for drug manufacturer, 30,000 M/T Barite Lumps for petroleum drilling and chemical industries. For further information, contact Allen Cohen, (619) 365-8880 — Telex 476286 Treaty Fax 516-386-8039.

Imidazole 98 per cent Party Hydrochloride "Major Manufacturer" and 99 per cent product in December. Imported by Cell & White Peoria, IL. 818-365-4534. Chem Sources, Inc. 11565 Laurel Canyon Blvd. Suite 117, Mission Hills, CA 91340.

Lard Oils, all grades — addicess tallow, stearines — methyl esters of tallow, lard & vegetable oils — sperm oil substitutes — blown oils. Manufacturer 35 years. Export, domestic. Vapor, Inc. 804-399-3576 — 1510 Columbus, Portsmouth, Va 23704.

## CHEMICALS OFFERED/WANTED

Chem/Mart Corp. will buy all of your surplus or off spec chemicals, plastics, pharmaceuticals and resins. Current bargain offerings: 22M lbs. Pentachloro Tetrasilane; Der 667; 40 dr. Ethylene T-30; 18M lbs. Kraton D4141; Calcium Acetate, U.S.P. and Geric Acid. Prompt efficient National service. Chem/Mart Corporation, 840 N. LaSalle St. Chicago, IL 60610. (312) 787-8800.

## CHEMICALS WANTED

Active Buyer of surplus chemicals, pigments, dyes, resins, plastics. Call toll free 1-800-831-3337 or 617-823-8737. Ober Polymer Corp. Chemical Div. 17 Industrial Drive, Holden, MA 01637.

All Surplus — Chemicals — Resins — Oils — Colors Solvents — Plasticizers — Specialties — Intermediates — bought by Rambach Chemical Co., Inc. 52 Vesey Street, PO Box 5187, Newark, NJ 07105. Phone: (201) 580-7774.

Cast for your surplus chemicals, resins, colors, pharmaceuticals, dyes, other raw materials, by products, wastes, residues and off-spec materials. Moran Chemicals Inc., 5500 Main Street, Williamsville, NY 14221 (716) 632-4000; Telex 919133.

Realize Top Value from the sale of your surplus Chemicals. We buy surplus Chemicals, Plastics, Resins, Waxes, etc. Bonmar Chemical Co., P.O. Box 494, Fair Lawn, NJ 07410. Phone: (201) 791-2448; Telex: 13-0344.

Reyn Corp. will buy your surplus chemicals, resins and resin raw materials — prime or off-specification. Reyn Corp. P.O. Box 63, 1540 W. Blancke St., Linden, NJ 07038. (201) 892-8787.

We Buy Surplus chemicals, colors, resin solvents, plasticizers, dyes, other raw materials, by products, wastes, residues and off-spec materials. Eason Color & Chemical Co., Inc. 85 Roosevelt Ave. Dept. C.P.O. Box 1028, Valley Stream, NY. 11582. (516) 781-4445.

## FACILITIES OFFERED

Toll Blending — Major U.S. Chemical Specialists manufacturer in S.E. Pennsylvania looking for suitable products to toll blend or repackaging. Adjacent to I-95. Rail loading, 7 loading docks, inside/outside tank farm and large inventory area. Equipment for dry or wet blending, including dry blend and products. Liquid and paste reactors from 500 to 7,000 cu. ft. capacity. Tank trailers from 2000 to 4000 cu. ft. sizes; rail tank car. Minuteman toller with 2000-bbl capacity. Packaging facilities include tank truck, wet or dry product bins, steel or fiber drums, 50-bbl bags, 5-gal, 1-gal, 8-oz. containers. For Information write CMR Box 728.

## POSITIONS OFFERED

Chemical Sales aggressive chemical distributor currently has high potential sales position available in northern N.J. Minimum 10-15 yrs. experience with good customer follow-up, familiarity with retail and technical sales required. We offer competitive compensation-territory opportunity. Send resume to Box CMR-721.

Plant Administrator/Manager, Tech mfgng executive. 75% mfgng/25% admin. Nitro, W.V. plant. Ultimately become C.E.O. Candidate currently plant or general manager of fine chemical company. 5 yrs + experience organic chemicals produced on batch/custome basis. Chem. or Chem. Eng. degree proven track record directly technical mfgng and support operations. Experience and training organic synthesis experience essential. Must have excellent communication skills, aggressive stock options, perks, etc. Send resume and brief letter with current salary to Arteil Chemicals, 91 Certyn Blvd., Farmington, N.Y. 11735, 516-894-8000.

Sales manager position offered to the right person knowledgeable in sales of Carbomer. Resins 2-6 years sales experience essential. Position requires 10-40 percent travel (Eastcoast). We offer salary and commission on your sales. Please submit a full resume of job history and qualifications to Box CMR-722.

# CHEMICAL IMPORTS

Continued from Page 61

NAPHTHOL Top Tex 276 lbs (Napthol Express) Bremenhaven, 8/12. Order 104 lbs (Ever Gentle) Hamburg, 8/13. NICKEL CHLORIDE Chlorine 1000 bgs (44821 lbs) (Dart American) Antwerp, 8/13. Rally Tar & Chemical 800 bgs (44821 lbs) (Napthol Express) Antwerp, 8/12. Vitachem 200 bgs (37214 lbs) (Dart American) Antwerp, 8/13. NITROAMINOPHENOL Lowenstein Dyes & Cosmetics 7 dms (2813 lbs) (Ming Ocean) Kobe, 8/14. NITROCHLOROETHANE Chloroethane 56 dms (42394 lbs) (Dart American) Bremenhaven, 8/14. ORANGE OIL Citrus & Almond Essences 80 dms (35274 lbs) (American Apollo) Santos, 8/14. OREGON COMMERCIAL INT'L Mutual Spice 110 bgs (2200 lbs) (Valent) Izmir, 8/14. Louis Fuchs 1325 bgs (26548 lbs) (Valent) Izmir, 8/14. 1102 bgs (22046 lbs) (Export Patriot) Piraeus, 8/16. Quality Spice 1102 bgs (22089 lbs) (Valent) Izmir, 8/14. Sodimex Food Products 1102 bgs (22089 lbs) (Valent) Izmir, 8/14. OXALIC ACID Browning Chemical 1544 bgs (78281 lbs) (Xiang He) Kobe, 8/16. T.R. AMERICA CHEMICALS 2145 bgs (19167 lbs) (Bacol Brasil) Rio Janeiro, 8/15. Triumph Commodities 700 bgs (39278 lbs) (Xiang He) Kobe, 8/16.

Alcoa Closes

Continued from Page 5

Custom solids packaging and distribution in the port of Mobile. Multi-wall bags, bulk bags, drums and bulk, Screening, repackaging and warehousing. Rail and truck facilities. Contact: Phillip Hahn, SEAPAC, Bldg. 14A, Broomey Complex, Mobile, AL 36816, 205/433-3541.

P-R

aluminum smelting capacity will stand at 3,927 million metric tons. By comparison, Aluminum Association reports that US industry capacity stood at 4,082 million tons at the end of 1984, and 5,019 million tons, the all-time high, at year-end 1982.

Observers generally attribute declining US aluminum capacity to high domestic production costs, mainly power rates, and rising imports of subsidized product from South America, Canada and elsewhere.

A 235,000 metric ton smelter in Quebec, for example, which partly owned by the provincial government, and receives hydroelectric power subsidies from the province, was dedicated two weeks ago, and its output is largely targeted for the US market.

Imports made large inroads in the US market earlier in the decade when the dollar was strong and US power rates were increasing. Since then the dollar has weakened and falling energy prices have slashed electric bills, but Mr. Spector says the changes still haven't made much of the US industry competitive with subsidized imports from Brazil, Venezuela, and elsewhere. He says many smelter owners here were forced to either spend millions modernizing their equipment or shut down.

At the time Alcoa announced its restructuring plan last winter, Mr. Spector says primary aluminum ingot was selling below production costs. He says ingot production costs averaged 65 cents to 70 cents per pound last year, while selling prices hovered in the 50 cent per pound range.

Mr. Spector says Alcoa, (along with Reynolds and Kaiser which have also trimmed capacity) became convinced that it couldn't sell primary aluminum at a profit, and decided to concentrate on downstream products.

Smelters remaining in operation, though, Mr. Spector also notes, have edged back into the black this year. Falling oil and natural gas costs have reduced most industry power rates to the point where Mr. Spector estimates that most ingot is currently produced at 45 cents to 50 cents per pound.

At the same time, aluminum selling prices have rallied about 8 cents per pound this year to an averaged cost of 57 to 58 cents per pound, according to Mr. Spector.

Alcoa's rationalization program is also designed to lessen the company's dependence on the aluminum industry and increase its stake in high-technology goods. Concurrent with Alcoa's announced smelter shutdowns, the company announced plans to purchase a minority stake in a French ceramics firm, Societe des Ceramiques Technique. The French company makes inorganic alumina membranes used for filtration and separations in food and beverage products, biotechnology, petroleum and other markets.

## Acquisition

We are interested in acquiring additional businesses.

Our Criteria Are:

1. Chemical related — direct or indirect.
2. Profitability — present or future.
3. Personnel — compatible and experienced.
4. Liquidity of equity.

If interested in exploring further, please contact:

T.L.Cuejao  
Berger & Company  
1050 Sansome Street  
San Francisco, CA 94111

# Middle East Chemicals

Continued from Page 5

rest of the world will increase ethylene capacity by an estimated 10 percent, to the end of the decade but that capacity in the Middle East will probably not change very much.

Thus, the Arab plastics market alone accounts for the equivalent of 54 percent of total capacity," he says, adding that much of the sales are being satisfied by OECD producers.

William D. Gersumky of SP Latin America told the world petrochemicals session of the congress he estimates the Brazilian chemical industry, including petrochemicals, will require at least \$10 billion in new investment over the next ten years just to accommodate the requirements of internal growth, while clearing exports equivalent to those of the import market.

Indeed, however, the "Pro-Alcohol" program has resulted in a marked change in the demand for petroleum refinery products since its inception. In 1979, for example, Mr. Gersumky says that gasoline accounted for 23 percent of refinery demand, diesel about 30 percent and fuel oil some 32 percent.

Last year gasoline ran at only 16 percent of the total, while fuel oil accounted for 21 percent and diesel commanded a whopping 42 percent of the refinery barrel.

## NAPHTHA AVAILABILITY

Petrobras refineries cannot accommodate the demands that are now being made on them, Mr. Gersumky says, noting that one result of the situation is that some 10 million tons of light naphtha is available for export sale or for use as a petrochemical feedstock.

With a low octane rating (50 RON or below) value of the product in export markets is low as is its price for domestic petrochemicals.

## PLASTICS RUN FULL

In 1986 and in 1988, he says the Brazilian petroplastics industry has been running almost flat, propelled by strong post-recession demand at home and by aggressively developed export markets, especially in midland China.

Polyethylene plants are seen to be operating at the limits of their nameplate capacities, while PVC and polystyrene units are operating at nearly 90 percent of ratings.

The export component of 1988 demand was only 6 percent and 15 percent, respectively, of PVC and LDPE totals, but it represented over half the HDPE output, and approached one-third of the polypropylene and polyethylene totals.

Another 100,000 tons of LDPE and a further 100,000 tons of polypropylene capacity in the works, Mr. Gersumky says, but adds that will not be enough. Projected thermoplastic demand totaling over 1.5 million tons in 1990 from projected increases on the order of only 7 to 8 percent per year. This seems modest, he says, in light of GDP projection of 6 percent per annum over the same period.

What is projected for the thermoplastics could be extended to other classes of petrochemical derivatives, he says, including syndiotactic intermediates, elastomers, conjugated solvents and others.

We see the need for substantial new capacity additions well within the next ten years if expected growth in internal market is to be met. Shortfalls of 75,000 to 10,000 tons of acrylonitrile, 125,000 to 150,000 tons of DMF/TPA, 75,000 to 100,000 tons of caprolactam and 100,000 tons of SBR are expected, Mr. Gersumky says.

## ETHYLENE SUPPLY TIGHTENS

Mr. Gersumky says the most serious shortfalls are expected in ethylene and propylene. He projects a 1990 capacity of 1.4 million tons of ethylene and says there will be a 50,000-ton shortfall in that year, growing to 100,000 tons in 1995. For propylene, capacity of 600,000 tons will be 450,000 tons short of the requirement in 1990 and 750,000 tons short of the 1995 requirement.

Armenia appears in much better shape, he says, although p-xylene capacity of 120,000 tons in 1990 will be 70,000 tons short of the requirement in that year and 120,000 tons short of the 1995 requirement.

Future availability and cost of feedstocks for Brazil's crackers is closely related to the nation's production of sugarcane and alcohol, he says, noting that last year about 23 percent of Brazil's automobile fleet was alcohol-powered and it is expected that the 50 percent mark will be reached in the early 1990's. However, the alcohol fuels program is unlikely to have any significant direct effect on petrochemicals and their future prospects, he consultant says, adding that last year less

## Senators Plan

Continued from Page 9

programmatic only or no bill at all, I'll go with programmatic," he says.

The Administration has threatened to veto superfund legislation if it contains a broad-based tax or significantly increases taxes on the petrochemical industry.

Even if Congress passes comprehensive superfund legislation, he says he fears President Reagan may veto the new bill without leaving Congress enough time to override the veto before it adjourns in early October.

"It would be a shame to see the work done on the programmatic side get caught in the crossfire," Sen. Lautenberg says. "I don't want to lose important provisions on community right to know, cleanup standards and citizens' right to sue. These are all at stake."

If Congress is adjourned and there is a pocket veto, we'll have to start from square one next year," notes Sen. Lautenberg.

The legislation proposed by the New

Jersey Democrat and other members of the Senate Environment Committee would ensure that the programmatic provisions of the toxic waste cleanup bill crafted during the six-month conference would be preserved should the tax conferees fail to act or should the President veto the tax title of superfund.

The agreement on non-tax provisions won general praise from environmental groups and was labeled a "compromise" by Chemical Manufacturers Association. It has also been endorsed by EPA Administrator Lee Thomas.

"We cannot afford to lose the great advances in the reauthorization legislation," says Sen. Lautenberg, who adds it is important that members of Congress and the President make their views on superfund clear before the upcoming elections.

Although the congressmen and senators assigned to drafting the funding portion of superfund have been tied up for months with tax reform, Sen. Lautenberg says he will continue to push for action on the funding provisions of the bill so action can be completed before adjournment.

# CHEMICAL PROFILE

Continued from Page 70

reduced feed costs by about 25 percent in the last year and heightened the competitiveness of domestic material against imported product.

## WEAKNESS

Worldwide, methanol is in oversupply and US inventories are currently high. Imports from regions with feed costs up to 75 percent below US levels have driven pricing down over 25 percent in the last two years. The Petrocoal waiver, which allowed up to 12 percent methanol in gasoline, was revoked in March by EPA and has taken about 140 million gallons out of the US demand figure.

## OUTLOOK

Methanol supplies will remain extremely long on a global basis through 1990 and imports will compete strongly with US production on the domestic market. MTBE will gain a greater stake in the world gasoline pool as lead phasedown takes full effect both here and in Europe. Methanol could see strong growth in fleet transportation fuels if current bus system tests in New York City, Florida and California prove successful.

## ADVERTISERS' INDEX

A-1 Chemical Equipment Co.	65
ACG Ltd.	25

# CHEMICAL PROFILE

## METHANOL

SEPTEMBER 22, 1986

### SUPPLY

PRODUCER	CAPACITY*
Air Products, Pensacola, Fla.	60
Borden, Gelsmar, La.	200
Celanese, Bishop, Tex.	150
DuPont, Beaumont, Tex.	250
Georgia Gulf, Plaquemine, La.	128
Lyondell Petrochemical, Channelview, Tex.	200
Tennessee Eastman, Kingsport, Tenn.	55
Texaco, Delaware City, Del.	100
Sterling Chemicals, Texas City, Tex.	100
Total	1,286

\*Millions of gallons annually of methanol. Allegheny Chemical Company mothballed its 130-million-pound-per-year Plaquemine La. facility in July, 1984. The unit is now for sale. Celanese indefinitely idled its 230-million-gallon-per-year Clear Lake, Texas facility in early 1984. DuPont's Beaumont plant tolls natural gas from its Conoco subsidiary and Phillips Petroleum Company. DuPont takes about half the output for internal needs. Phillips takes about 10 percent for its MTBE operation while Getty and Tenneco take equal portions of the remainder for merchant sales. DuPont restarted the Beaumont plant in March of 1986 after shutting the unit in early 1985. DuPont will also shut its Deer Park, Tex., 200-million-gallon-per-year plant this October. The company will turn the unit over to USI Division of National Distillers & Chemicals Corporation as part of an agreement to end the DuPont/USI Syngas joint venture. USI is undecided on whether to restart the unit. Georgia Gulf was formed January, 1985 in a management buyout of Georgia-Pacific chemical interests. Rohm and Haas has a 22-million-gallon-per-year plant on standby at Deer Park, Tex. Sterling Chemicals acquired its methanol unit in an August leveraged buyout of Monsanto's Texas City, Tex. site. Sterling said it will close the unit in the first quarter of 1987. Texaco acquired its facility in December, 1984 when it bought Getty Oil Company. Tenneco has an idled 140-million-gallon-per-year unit at Pasadena, Tex. Profile last published 9/19/83; this revision, 9/23/86.

### DEMAND

1985: 1.28 billion gallons; 1986: 1.35 billion gallons; 1990: 1.6 billion gallons.

### GROWTH

Historical (1976-1985): 4.1 percent per year; future: 4.5 percent per year through 1990.

### PRICE

Historical (1953-1986): High 71c. per gallon, tanks, f.o.b. Gulf Coast; low, 11c. per gallon, same basis. Current: 27c. per gallon, Gulf Coast barges.

### USES

Formaldehyde, 27 percent; MTBE, 25 percent; acetic acid, 11 percent; chloromethanes, 7 percent; solvents, 8 percent; methyl halides, 4 percent; methyl methacrylates, 4 percent; methylamines, 3 percent; methylene chloride, 2 percent; utility power, 1 percent; miscellaneous and exports, 2 percent.

### STRENGTH

MTBE demand will expand by up to 15 percent annually through 1990. Shutdown of over 600 million gallons of annual capacity in the US in the last 3 years has moderated methanol oversupply. Falling US natural gas prices have

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# BASF Plastics Unit

(Continued from Page 7)

opment in the plastics sector. (In addition, BASF bought Imont Corporation in August 1985, and purchased the fibers operations of American Enka in December, 1985.)

The company's most recent investment decision came last week. BASF said it will build an advanced composites production facility at its main complex in Ludwigshafen.

The facility will produce a range of preps and structural adhesives made from epoxy resins impregnated with carbon fibers. The facility will be fully on stream in early 1988 at a cost of \$19.5 million.

BASF says the laminates plant will provide a European base for BASF Structural Materials, Inc., a Charlotte, N.C.-based unit of BASF, which was formed in Spring 1985 following BASF's purchase of Celanese Company's laminates business.

These assets include the "Celon" carbon fiber division which produces carbon fibers, and Narmco Materials, a maker of film adhesives and preps.

To meet US growth for these advance composites in aerospace uses, BASF Structural Materials has launched a \$20 million carbon fiber precursor plant at Williamsburg, Va. to support a recently expanded 150-metric-ton-per-year carbon fiber plant at Rock Hill, S.C. The Ludwigshafen plant is expected to meet European demand for laminates in both aerospace and automotive applications in the late 1980's.

The addition of sheet molding compound capacity gives BASF greater flexibility in marketing its line of advanced plastics. However, the company's strength continues to lie in its large and growing stable of engineering thermoplastics.

New catalyst systems designed by BASF have also breathed new life into the company's polyethylene products.

### TWO RECENT ADDITIONS

Its most recent additions are two lines of polymer blends, one alloying polypropylene ether (PPE) and high-impact polystyrene (HIPS) under the trade name "Luranyl", and the other blending PPE with nylon, called "Ultranyl".

These two products are in the first stages of commercialization, BASF says, and are made in small quantities in a pilot plant. BASF is currently building a 12,000-metric-ton-per-year plant for "Luranyl" and "Ultranyl" products, which is due on stream in the second quarter of 1987. The company plans to later extend this capacity to 24,000 metric tons.

BASF is basic in PPE, HIPS, and nylon. The company plans to market the new alloys to the automotive industry in making hub caps, spoilers, air vent grids, wing mirror housings, instrument panels, steering column casings and other components. It will also sell the plastics to the electronics industry for use as machine housings, printed circuit boards, and other applications.

The company is paying sharp attention to the automotive industry, which has embraced plastics in a wide variety of non-structural, and increasingly, in structural applications. In addition to its PPE-based alloys, BASF markets a number of engi-

nereered plastics to the auto industry, including:

- "Novolen" group of polypropylene-based products for making fenders on lower medium priced cars.
- "Ultradur" and "Ultrablend" families of polybutylene terephthalate (PBT) blends used in spoilers and fenders of higher-priced cars. "Ultradur" consists of elastomer-modified PBT, while "Ultrablend" alloys PBT with polycarbonate.

- "Ultramid" KR 4446, a mineral-reinforced nylon 6 tailor-made for the front wheel hub cap of the Opel Ascona. This thermoplastic can be painted on line.

- "Ultramid" KR 4470, a fiber glass reinforced nylon 6 composite steering wheel for the 1987 "Quattro Sport."

- New grades of "Elastolan", glass reinforced thermoplastic polyurethanes used in painted components needing chip resistance, such as door trim, and door sill coverings.

- "Ultraform" N 2200 G4, a glass reinforced acetal resin used to make torsion bars in certain models of Mercedes-Benz autos.

Looking ahead, BASF is committing its resources to a European research project "Carimat 2000", that seeks to design and build an auto made mostly from plastics. BASF says it will contribute a plastic roof, laminate engine mounting, and sheet molding compound based engine hood to the project.

While BASF is devoting large amounts of time and resources to developing engineering resins, it is not neglecting standard plastics. The company has come up with several new grades of its "Novolen" polypropylene products, for automotive and packaging applications.

New catalyst systems designed by BASF have also breathed new life into the company's polyethylene products.

### House Okays

(Continued from Page 7)

accepted a proposal by Rep. Berkley Bedell (D-Iowa) to eliminate a \$50,000 exemption for 127 pesticide ingredients for which EPA already has issued re-registration standards. Making those ingredients subject to the full \$150,000 fee would raise another \$6 million for EPA's work.

But lawmakers then defeated an attempt to fill the remaining \$48 million shortfall by doubling the fees on chemical companies.

"We have gone too far and been through too much controversy to lose this bill to a veto because it is not properly funded," argued Rep. Steve Gunderson (R-Wis.) in offering the amendment. "You are going to have to choose between properly funding this legislation or cutting some other program later on."

Rep. Bedell countered that "pesticides benefit all of society" and therefore the chemical industry should not have to bear an inequitable share of the funding.

Rep. Pat Roberts (R-Kan.) also opposed the amendment, noting that any increase in fees would be passed along to farmers, the primary consumers of pesticides.

# JOB & PEOPLE

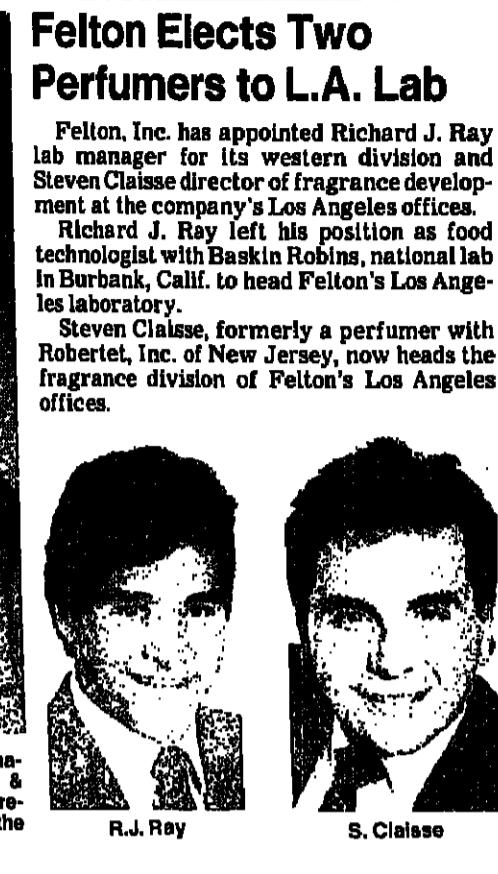
# JOB & PEOPLE

### Chemcentral Appoints Sales Representatives

ChemCentral Corporation has appointed William T. Hugo resident salesman in New York and W.M. Chamberlain sales representatives of Southern Oklahoma and the Texas Panhandle.

Prior to joining ChemCentral, William Hugo was assistant director of marketing for a drug firm in New Jersey; he will be handling the New York and New England areas.

W.M. Chamberlain, who was hired in Dallas and completed his training in Oklahoma City, is a chemical engineering graduate from the University of Arkansas.



R.J. Ray

S. Claisse

Edward R. Lachey, who has been appointed manager of corporate purchasing at Stepan Company. He has for several years been active in chemicals purchasing and crude oil trading with Amoco Corporation.

Dr. John A. Kelly who has been named international director of research for W.R. Grace & Co.'s Dearborn division. He will head the recently expanded water treatment facilities at the division's headquarters in Lake Zurich, Ill.

Northeast... PETER SHERIDAN has been named technical sales representative for Alcolac, Inc., Baltimore, Md. DIANE METCALFE has been elected technical sales representative of Wicken Products, Inc.'s

ROBERT B. JONES has been named president and chief executive officer of Jones Chemicals, Inc., Baltimore, Md. VITO PRICOLA has been appointed senior executive vice-president and chief operating officer of Jones Chemicals, Inc. and RONALD SANIEWSKY has been elected vice-president of finance and accounting for the firm.

FRED ERDMANN has rejoined Dames and Moore as principal-in-charge of the Cincinnati division... MIKE SMETANKA has been appointed sales representative of the Ram Chemicals Division of Whittaker Corporation... GEORGE RIGHTEY has been

PAUL HERRLETT has been appointed manager of technical sales for Amerchol Corporation, covering selected customers in the

international division, responsible for sales and service in the United Kingdom.

JACK MCCLARRAN has been named vice-president of the urethane division of Flexible Products Company... JOAN COCHRANE has been appointed manager of administrative services for the organics division of the Witco Corporation.

P. Szymborski

C. Torelli

P. Herrlett

P. Sheridan

D. Metcalfe

vice-president of the new spices and seasonings division of Bush Boake Allen, Ltd... CLARENCE WILLIAMS has been elected assistant vice-president of information systems for Betz Laboratories... MARYLOU YOAKUM has been named sales representative for the Dallas area of Unocal Chemicals.

V. McClarran

J. Cochran

# MEETINGS CALENDAR



### THIS WEEK

CHEMICAL INDUSTRY ASSOCIATION, monthly luncheon meeting, Parker Meridian Hotel, New York, September 25.

CHLORINE INSTITUTE, Fall meeting, The Homestead, Hot Springs, Va., September 21-25.

CONFERENCE BOARD, business outlook conference, Waldorf-Astoria Hotel, New York, September 24-26.

COUNCIL FOR CHEMICAL RESEARCH, annual meeting, Northwestern University, Evanston, Ill., September 28-30.

PULP CHEMICALS ASSOCIATION, 13th International naval stores meeting, Waldorf-Astoria Hotel, New York, September 15-17.

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, OSHA compliance trade fair and seminar, Intercontinental Hotel, New Orleans, La., September 25-26.

WOMEN IN FLAVOR & FRAGRANCE COMMERCE, annual open dinner meeting, Loew's Lincoln, Teaneck, N.J., September 25.

### OCTOBER

AMERICAN MICROCHEMICAL SOCIETY, eastern analytical symposium, jointly with American Chemical Society for Applied Spectroscopy, New York Hilton Hotel, New York, October 20-24.

ASSOCIATION OF THE NON-WOVEN FABRICS INDUSTRY, eighth international conference and exhibition, Georgia World Congress Center, Atlanta, Ga., October 21-23.

FIRE RETARDANT CHEMICALS ASSOCIATION, Fall conference on proper processing and selection of flame retardants, Klawath Island, S.C., October 19-22.

CHEMICAL GROUP, NATIONAL ASSOCIATION OF PURCHASING MANAGEMENT, Fall Conference, Marriott Pavilion Hotel, St. Louis Mo., October 21-23.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, seminar on aerosol technology, Ramada Hotel O'Hare, Rosemont, Ill., October 27-28.

SOCIETY OF THE PLASTICS INDUSTRY, plastics show and conference — South, jointly with the Society of Plastic Engineers, Georgia World Congress Center, Atlanta, Ga., October 8-10.

SOCIETY OF THE PLASTICS INDUSTRY, polyurethane division, 30th annual rigid polyurethane technical/marketing conference, Toronto, Ontario, Canada, October 6-17.

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### LATER ON

AMERICAN PETROLEUM INSTITUTE, annual meeting, San Francisco, Calif., November 8-11.

AMERICAN SPECIALTIES MANUFACTURERS ASSOCIATION, 73rd annual meeting, Marriott D'Harbord Beach Resort, Fort Lauderdale, Fla., December 7-11.

FERTILIZER ROUND TABLE, Sheraton Inner Harbor Hotel, Baltimore, Md., November 17-19.

FRAGRANCE MATERIALS ASSOCIATION OF THE UNITED STATES, 10th international congress of essential oils, fragrances and flavors, Omni Shoreham Hotel, Washington, D.C., November 16-20.

K-86, 10th international trade fair for plastics and rubber, Dusseldorf, West Germany, November 8-11.

LATIN AMERICAN PETROCHEMICAL ASSOCIATION, sixth annual meeting, Rio Palace Hotel, Rio de Janeiro, Brazil, November 23-25.

NATIONAL ASSOCIATION OF CHEMICAL DISTRIBUTORS, 15th annual meeting, Flit-Center Hotel, Naples, Fla., December 2-3.

NATIONAL PAINT & COATINGS ASSOCIATION, 86th annual meeting, Atlantic Hilton Hotel, Atlantic City, N.J., November 3-5.

A.L. LABORATORIES Inc., maker of "EMD" antibiotic for swine and poultry, has established new corporate headquarters in Northern New Jersey. The company's new address is One Executive Drive, P.O. Box 1390, Fort Lee, N.J. 07024. The new facility houses all executive, marketing and sales management personnel. A.L. Labs will continue to operate its manufacturing plant in Chicago Heights, Ill.

ALMAT, plans to introduce a new liquid makeup available in six shades as part of its "Visible Skin Care" line. According to ALMAT, the liquid makeup category is one of the strongest growth categories in cosmetics.

EASTMAN CHEMICAL PRODUCTS INC. has introduced a reactive polymer intermediate, acetoxacetoxymethyl methacrylate, for evaluation in plastics, coatings and other polymer applications. Eastman says the active methylene group in the acetoxacetoxymethyl methacrylate provides two separate reactive sites for exploration for polymer development with AAE.

JOHNSON WAX's specialty chemical group has started production at a new plant in Seaford, Del. The state-of-the-art plant will manufacture "Cell Energizing Complex" and a suncream.

AYERST LABORATORIES has introduced a new dosage of its "Posture" high-potency calcium supplement made of calcium phosphate. The company has also launched a new vitamin D formula. Ayerst, a